

16091-14754A
16092

CS: 16091

ID: 14754A

Is 16091-14754A, Pts 1&2,
I 75-5(37)302

14.5 mi of guard rail
upgrading, culvert ext
& sign upgrading & railing
replac & bridge deck
overlay on 9 brdge on
I-75 fr M-68 N'ly to
Levering Rd. Cheboygan
Co. Item 32.

STATE OF MICHIGAN
DEPARTMENT OF STATE HIGHWAYS AND TRANSPORTATION

PLANS OF PROPOSED

MICHIGAN PROJECT I-75-5(37)302
CONTROL SECTION Is 16091 & Is 16092
JOB NUMBER 14754A
I-75

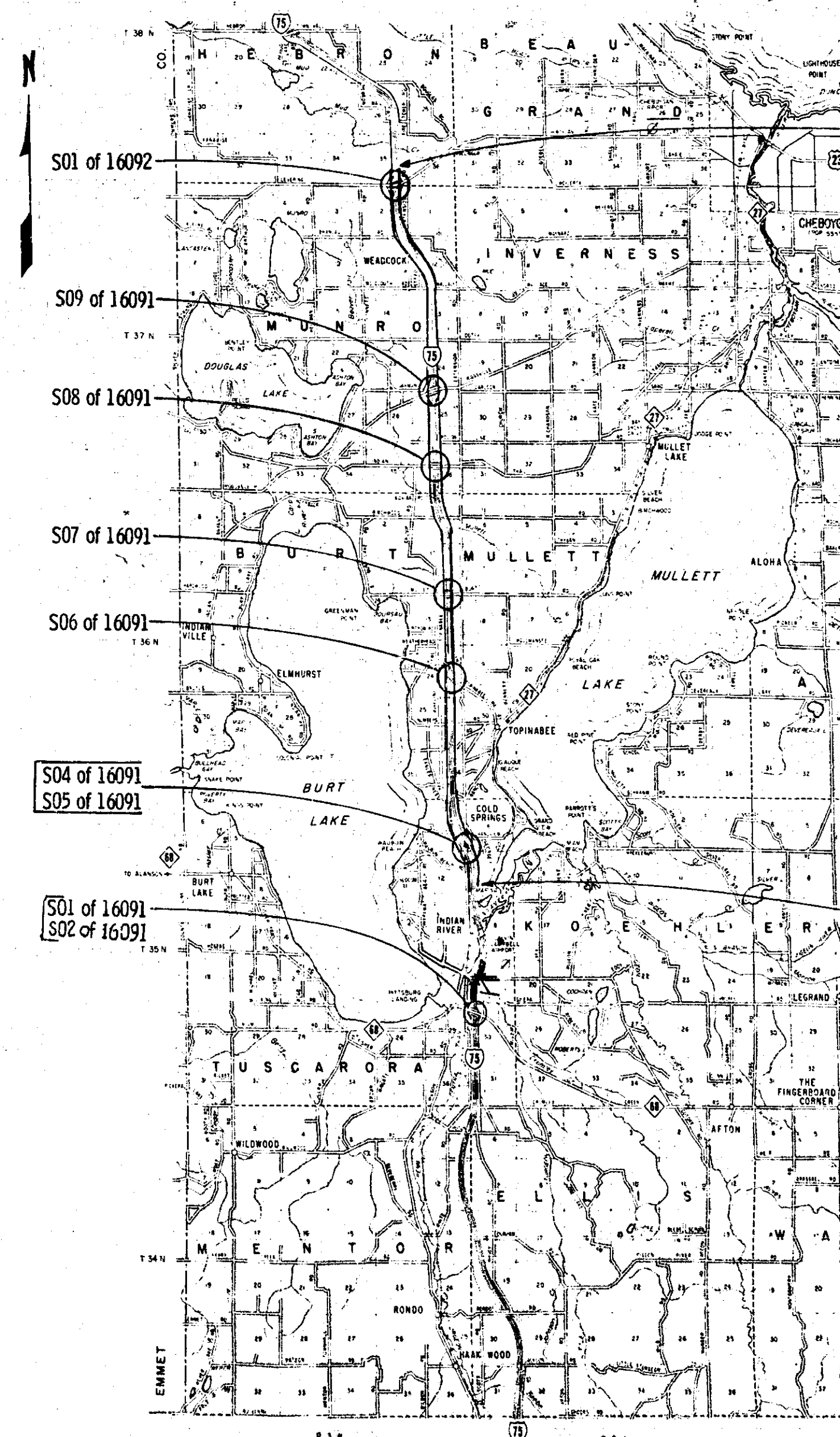
CHEBOYGAN COUNTY
HEBRON, MUNRO, BURT, TUSCARORA & KOEHLER TWPS.

ROAD PLANS	SHEET NOS.
TITLE	1
NOTE SHEET	2
PLANS & PROFILES	3-15
SPECIAL DETAILS	16-19
QUANTITY SHEETS	20

ROUTE	JOB NUMBER	FEDERAL NUMBER	SHEET NO.	TOTAL SHEETS
I-75	14754A	I-75-5(37)302	1	20

THE IMPROVEMENTS COVERED BY THESE PLANS SHALL BE DONE IN ACCORDANCE WITH THE MICHIGAN DEPARTMENT OF STATE HIGHWAYS 1976 STANDARD SPECIFICATIONS AND SUPPLEMENTAL SPECIFICATIONS

LEGEND	YEAR
A.D.T.	1977, 5300
D.H.V.	
COMM. %	
DESIGN SPEED	



Michigan Project I-75-5(37)302
Control Section Is 16091 & Is 16092
Job Number 14754A
End Sta. 1038+78

Michigan Project I-75-5(37)302
Control Section Is 16091 & Is 16092
Job Number 14754A
Begins Sta. 282+10

TITLE SHEET LEGEND

PROPOSED PROJECT	=====
EXISTING ROADS	=====
PAVED	=====
BITUMINOUS	=====
GRAVEL	=====
UNIMPROVED OR CITY STREET	=====
SECTION LINE	=====
TOWNSHIP LINE	=====
COUNTY LINE	=====
CITY OR VILLAGE LIMITS	=====
RAILROADS	=====

CONTRACT FOR SIGN UPGRADE, GUARD RAIL UPGRADE, BRIDGE RAILING REPLACEMENT & CULVERT EXTENSION			
APPROVALS			
CHECKED	<i>E. J. Zajac</i>	4/4/79	DATE
RECOMMENDED FOR APPROVAL	<i>M. Tarkenton</i>	4/4/79	DATE
RECOMMENDED FOR APPROVAL	<i>R. C. Channing</i>	4/6/79	DATE
RECOMMENDED FOR APPROVAL	<i>R. C. Channing</i>	4/10/79	DATE
DEPARTMENT OF STATE HIGHWAYS AND TRANSPORTATION JOHN P. WOODFORD - DIRECTOR			
APPROVED BY	<i>G. M. Condy</i>	4/19/79	DATE
PLANS PREPARED BY	WONG	U. S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION	
CONTROL SECTION	JOB NUMBER	FEDERAL NUMBERS	SHEET NO.
Is 16091 & 16092	14754A	I-75-5(37)302	92305

Is 16091 & Is 16092 - 14754A

NOTE SHEET

RES. NO.	STATE	FEDERAL PROJECT	R.O.W. SHEET NO.	TOTAL SHEETS
5	MICH.		2	
ROUTE	COUNTY	CONTROL SECTION	JOB NO.	
I-75	CHEBOYGAN	Is 16091 & Is 16092	14754A	

GENERAL PLAN NOTES

UNDERGROUND UTILITIES

For protection of underground utilities, the contractor shall dial 1-800-482-7171 a minimum of 48 hours prior to excavating in the vicinity of utility lines. All "Miss Dig" participating members will thus be routinely notified. This does not relieve the contractor of the responsibility of notifying utility owners who may not be a part of the "Miss Dig" alert system.

CLASS B SODDING

Where Class B Sodding is called for in the plans, the beds shall be trimmed within the tolerances specified for Class A Slopes.

BEDDING AND FILLING

Bedding and filling around pipe culverts shall be done as specified on Standard Plan IV-82 Series.

References to "possible borrow sources" appear at various locations on these plans. These references are for the contractor's information only. No payment for earth excavation or hauling will be made for grading work at these locations. If the contractor chooses to use these areas to acquire dirt for use as embankment, the disturbed slopes shall be seeded, fertilized, and mulched at the direction of the engineer, and payment for these items will be made at the contract unit price.

Guard Rail

Prior to the contractor's ordering of curved beam guard rail elements, the engineer shall verify in the field that the radii shown on the plans are satisfactory.

Where existing guard rail is to be eliminated, it shall not be removed until the slope has been flattened as called for on plans or approved by the engineer.

Salvaged Beam Gd. Rail shall be stockpiled at a location designated by the engineer and shall be the property of the Department.

MISCELLANEOUS ESTIMATES

The following items of work shall be done as they apply throughout the project. These items are not detailed or included on the plan and profile sheets:

Topsoil Surface 3 Inches	26,190 S. Y.
Mulch (Slopes as directed by the Engineer) (Est. @ 3.0 Tons/Acre)	16 Tons
Anchoring Mulch	5 Acre
Cereal Rye Seeding	324 Lbs.
Roadside Seeding	540 Lbs.
Chemical Fertilizer Nutrient	1296 Lbs.
Mobilization	1 L.S.
Class B Sodding	5859 S.Y.
Water	15 Units
On-the-Job Training	2 Each

Erosion and Sedimentation Control Quantities:

Hay or Straw Bales	100 Each
Cereal Rye Seeding	120 Lbs.
Mulch (Est. @ 3.0 Tons/Acre)	6 Tons
Anchoring Mulch	2 Acre
Temporary Fence (Used to anchor Bales)	200 LFt.

Items of Work to be used for Maintaining Traffic during construction are included in Bridge Plans.

PUBLIC UTILITIES

The existing utilities listed below and shown on these plans represent the best information available as obtained from our Utility Section on October 24, 1978. This information does not relieve the contractor of the responsibility to satisfy himself as to their accuracy or of his responsibility in case utilities have been changed since the above date.

NAME AND ADDRESS OF OWNER	KIND OF UTILITY
Michigan Bell Telephone Co.	Telephone
Consumers Power Co.	Electric
Consumers Power Co.	Gas

Owners of public utilities will not be required by the Department to move additional poles and structures that are not within grading or structure limits in order to facilitate the operation of construction equipment, unless it is determined by the engineer that such pole line or structures constitute a hazard to the public or are extraordinarily dangerous to the Contractor's operations.

NOTES APPLYING TO STANDARD PLANS

Where the following items are called for on plans, they are to be constructed according to standard plan given below opposite each item unless otherwise indicated.

Catch Basins and Inlets	I-5C
Cover E	I-10A
Buffered End (For Beam Guard Rail)	III-57A *(See Exception)
Guard Rail Ending with Cable Anchorage	III-58D
Guard Rail at Structures	III-59C
Beam Guard Rail - Types A, B, and C	III-60C *(See Exception)

Structure Guard Rail Anchorage (Type B)	III-68B
Granular Blanket, Underdrains, & 6" Culvert End Section	IV-80A
Bedding and Filling around Pipe Culverts	IV-82D
Outlet Headwalls, Concrete Rings, Drainage Marker, Mailbox & Wood Guard Posts	IV-85C
Precast Concrete End Section for Pipe Culvert	IV-86A (Except the Concrete Shall Have Air Entrained Content of 6 ± 2 Percent)
Steel End Section	IV-88A
*(Exception) Buffered Ends, Curved Beam Elements, Terminal End Shoes, and Special End Shoes will be same Material as adjacent Run of Guard Rail.	

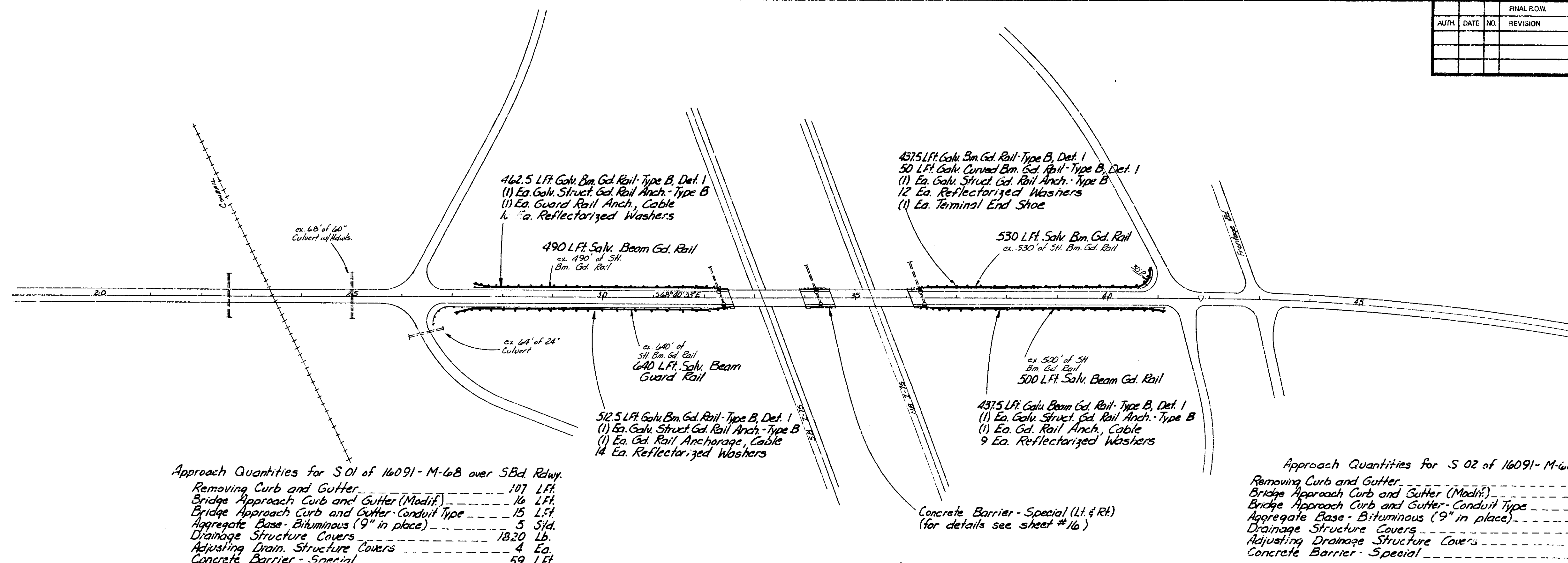
Soil Erosion & Sedimentation Control Measures	V-96B
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Sodding	VI-100A
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Special Details not listed under Standard Plans

	SPECIAL DETAIL
Steel Grate for Precast Concrete End Section	4
Fillerwalls between Existing Bridge Piers	5
Structure Guard Rail Anchorage (Type A)	Special Detail 7-I

FINAL ROW			
AUTH.	DATE	NO.	REVISION



M- 68

Filler Wall Quantities						
Structure Number	Crossroad	Number of Bays	Width of Bay	Filler Wall Conc. Grade 35	Steel Reinforcement	3/4" Expansion Anch. Bolts
S 04 of 16091	US-27	5	9'-4"	13.0	691	80
S 05 of 16091	US-27	5	9'-5"	13.1	695	80
S 06 of 16091	Topinabee Rd.	4	7'-7 3/4"	8.5	422	64
S 07 of 16091	Miami Beach Rd.	2	9'-6"	5.3	279	32
S 08 of 16091	Indian Trail Rd.	2	9'-6 3/4"	5.3	279	32
S 09 of 16091	Riggsville Rd.	2	10'-4 8/8"	5.7	293	32
TOTALS				51 Cu.Yds.	2659 Lbs.	320 Each

Entire Project Quantities
For restoration of slopes at locations
of culvert extensions and maint. x-overs.

Embankment (CIP)-----5049 C.Yds.
Topsoil Surface-3"-----23,100 S.Yds.
Mulch-----15 Tons
Anchoring Mulch-----5 Acres
Cereal Rye Seeding-----286 Lbs.
Roadside Seeding-----477 Lbs.
Chemical Fertilizer Nutrient-----1065 Lbs.

(30) indicates soil erosion & sedimentation control
measure. See Standard Plan V-90-B. Use
snow fence for added stability.

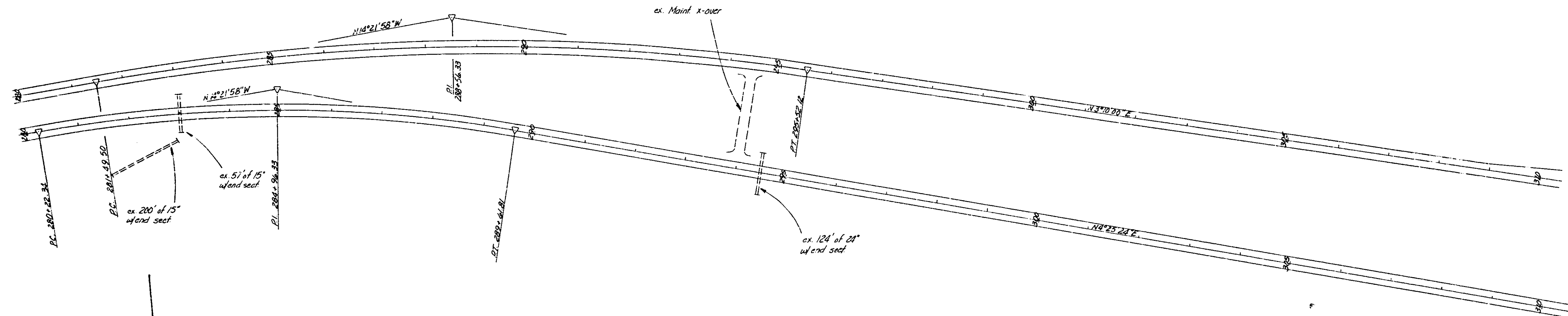


DATE	SCALE	CONT. SEC.	JOB NO.	DESIGN UNIT	SHEET NO.
	1"= 100'	16091 16092	14754A	WONG	3

FINAL ROW			
AUTH.	DATE	NO.	REVISION

Curve Data (N.Bd)
 $\Delta = 18^\circ 41' 22''$ RT
 $D = 2^\circ 00' 00''$
 $R = 2864.79'$
 $T = 473.99'$
 $L = 939.47'$
 $E = 38.95'$
 $PC = 280+22.34$
 $PI = 284+56.33$
 $PT = 289+61.81$

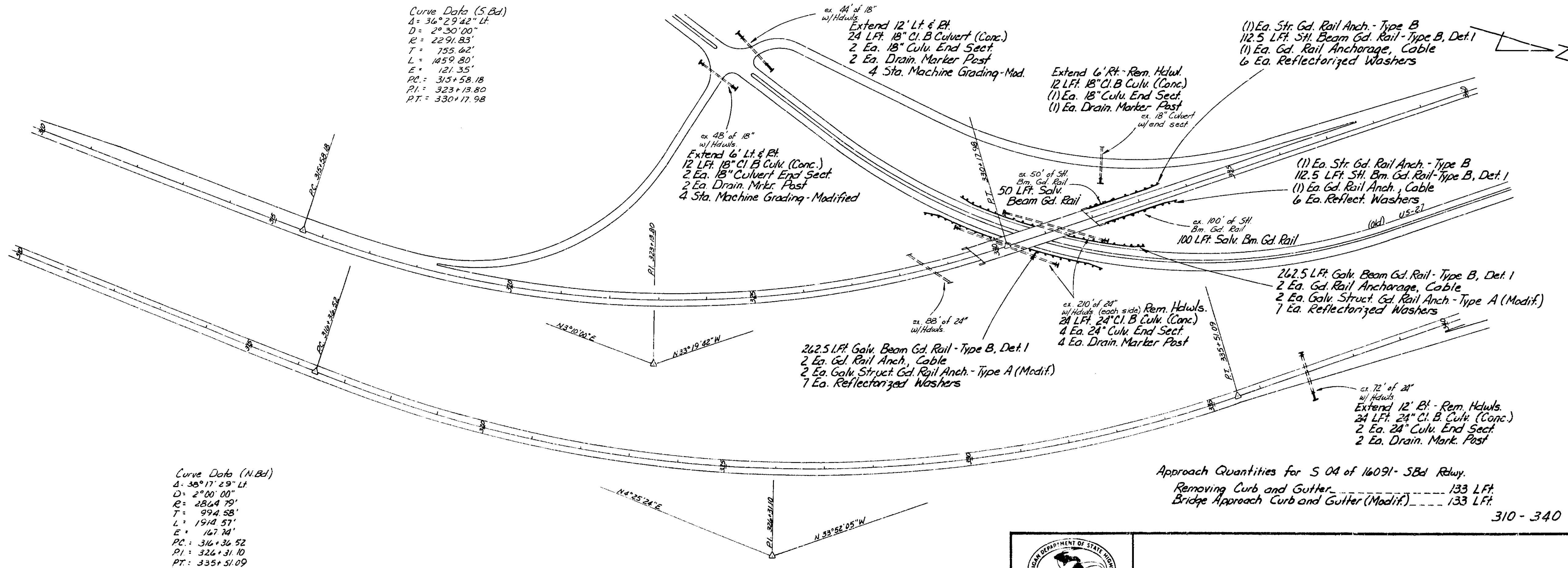
Curve Data (S.Bd)
 $\Delta = 17^\circ 31' 58''$ RT
 $D = 1^\circ 15' 40''$
 $R = 4583.44'$
 $T = 706.83'$
 $L = 1402.62'$
 $E = 54.18'$
 $PC = 281+49.50$
 $PI = 288+56.33$
 $PT = 295+52.12$



Mich. Proj. I-75-5(37)302
 State Proj. Is 16091
 Job No. 14754 A
 Begins Sta. 282+10

P.O.B. - 310

Curve Data (S.Bd)
 $\Delta = 36^\circ 29' 42''$ LT
 $D = 2^\circ 30' 00''$
 $R = 2291.83'$
 $T = 755.62'$
 $L = 1459.80'$
 $E = 121.35'$
 $PC = 315+58.18$
 $PI = 323+13.80$
 $PT = 330+17.98$



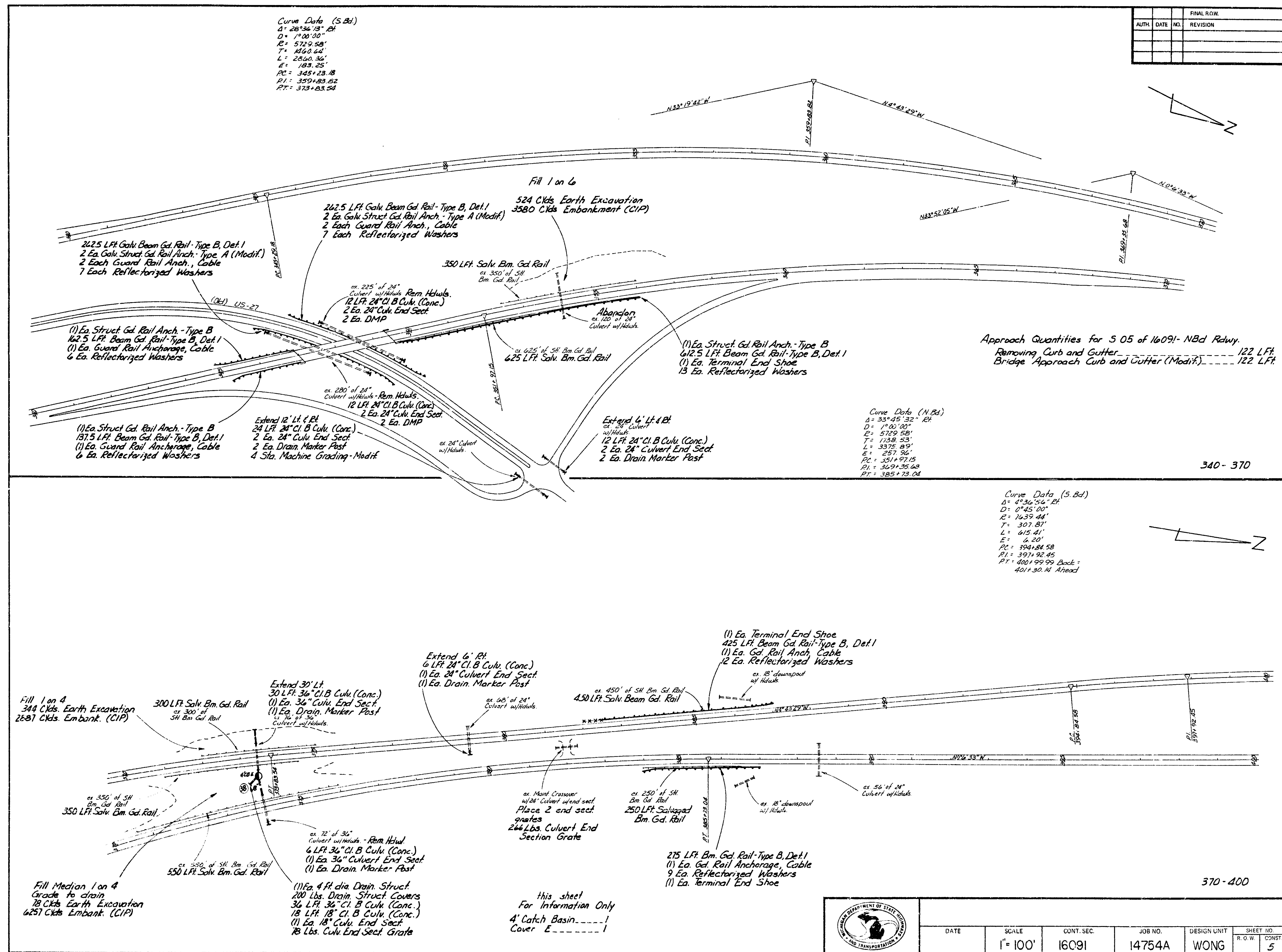
Curve Data (N.Bd)
 $\Delta = 35^\circ 17' 29''$ LT
 $D = 2^\circ 00' 00''$
 $R = 2864.79'$
 $T = 994.58'$
 $L = 1910.51'$
 $E = 167.74'$
 $PC = 316+36.52$
 $PI = 326+31.10$
 $PT = 335+51.09$

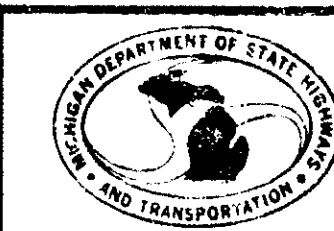
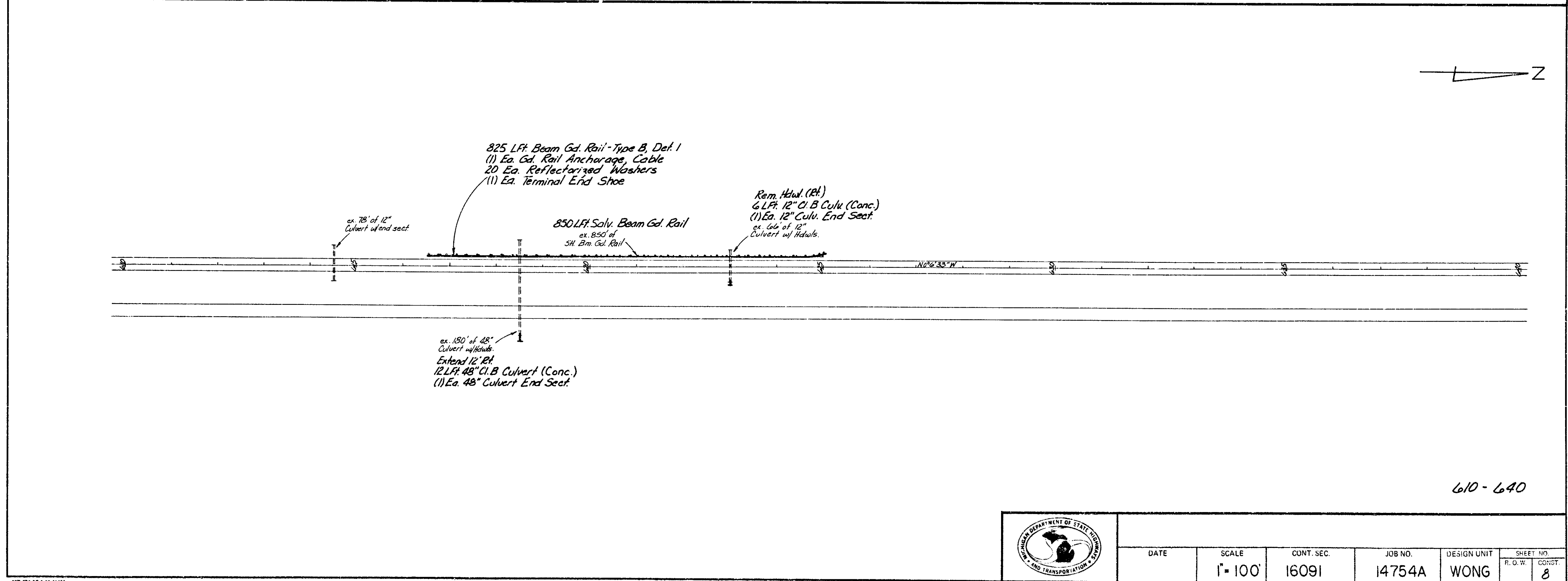
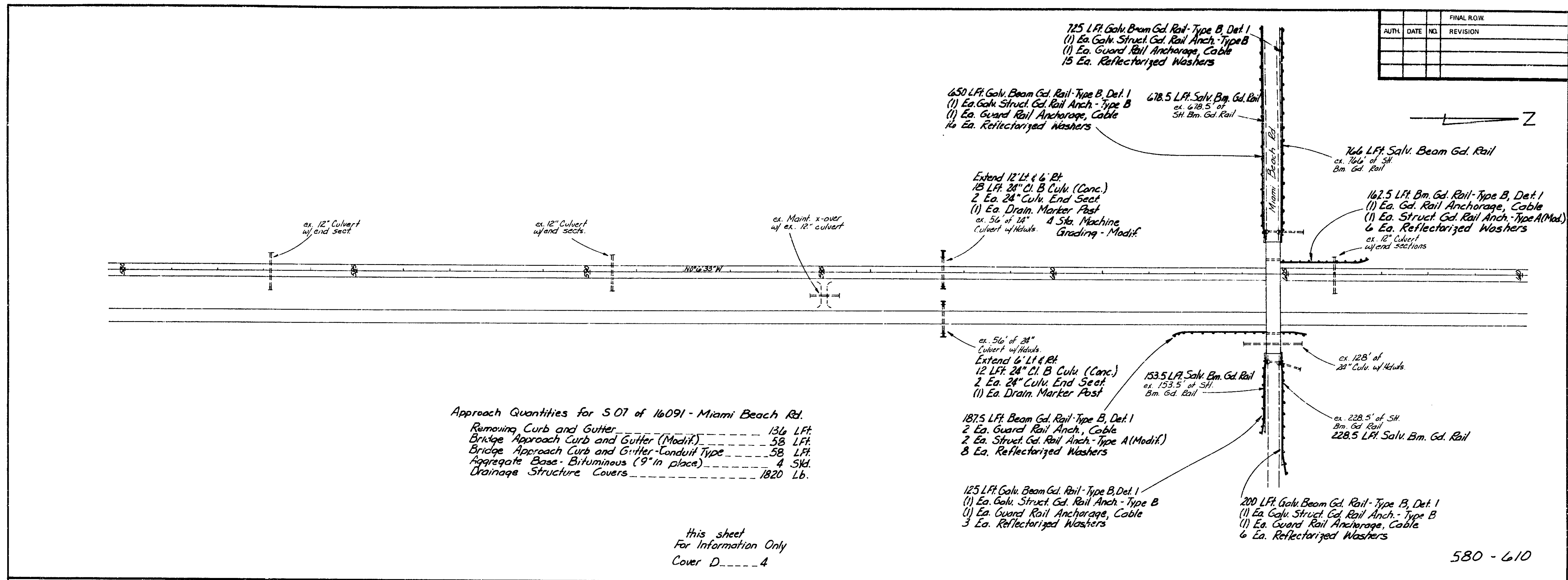
Approach Quantities for S 04 of 16091- SBd Rwy.
 Removing Curb and Gutter..... 133 L.Ft.
 Bridge Approach Curb and Gutter (Modif.)..... 133 L.Ft.

310 - 340

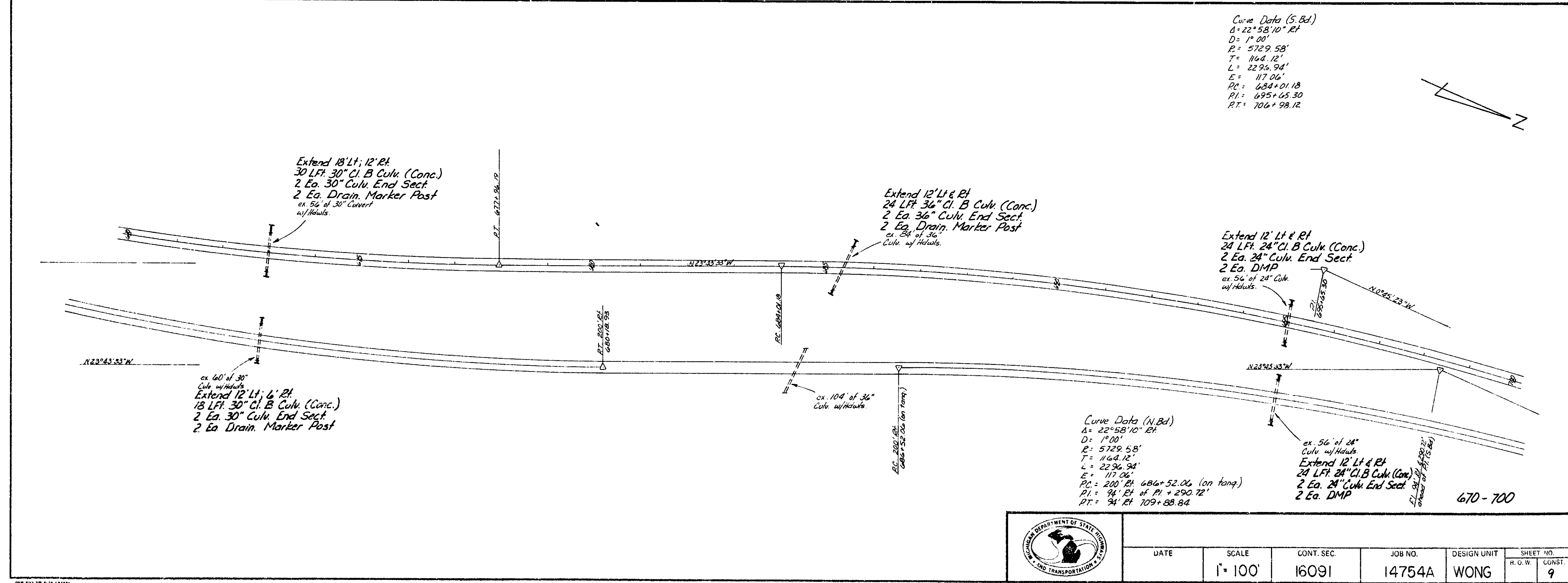
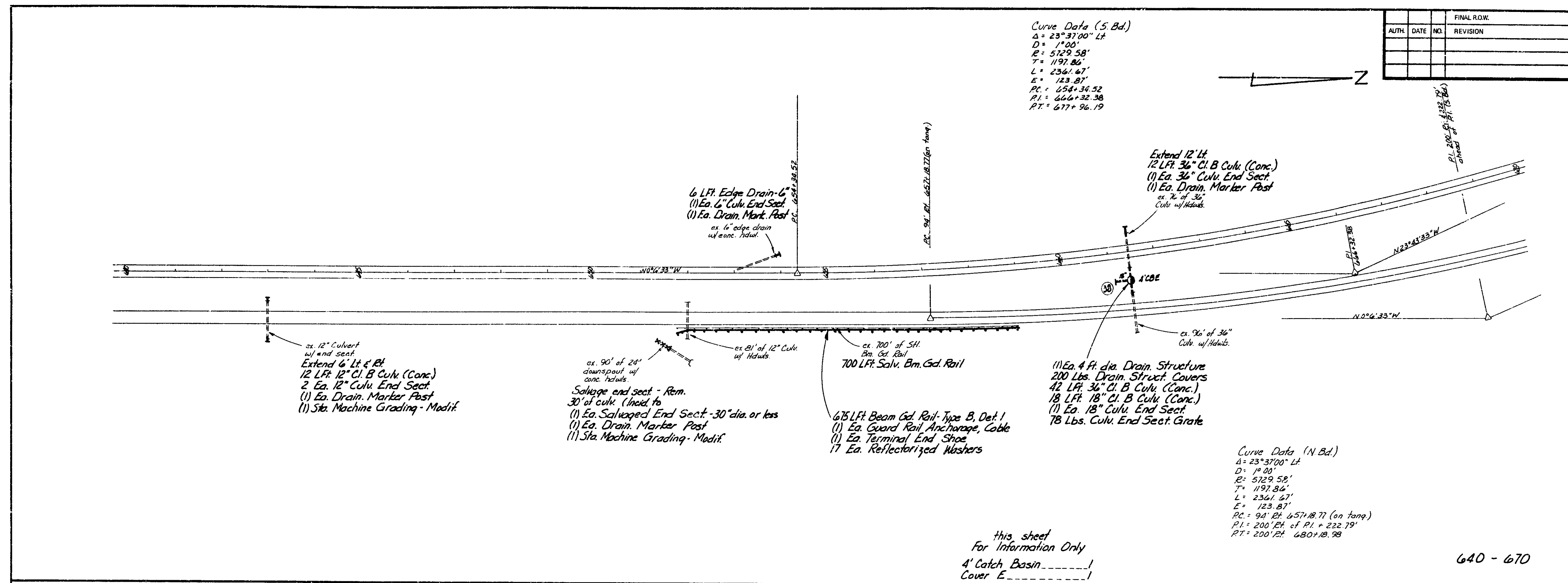


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	1" = 100'	16091	14754A	WONG	4



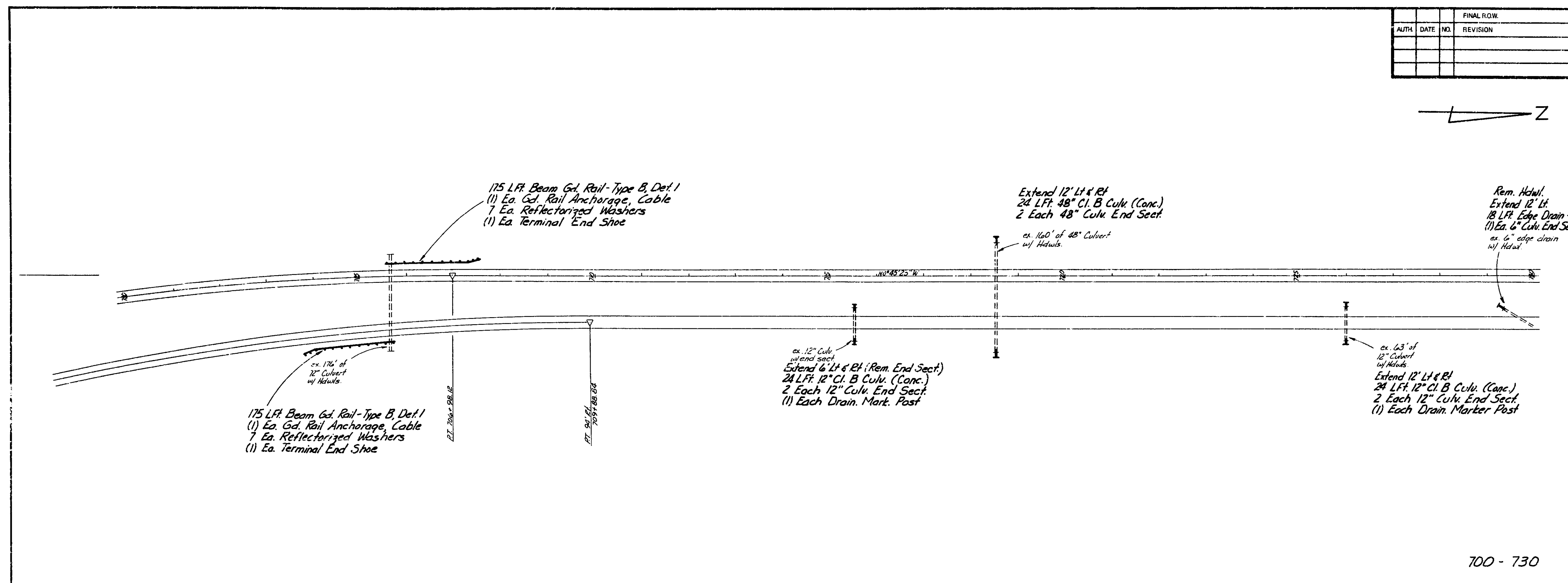


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	1" = 100'	16091	14754A	WONG	8

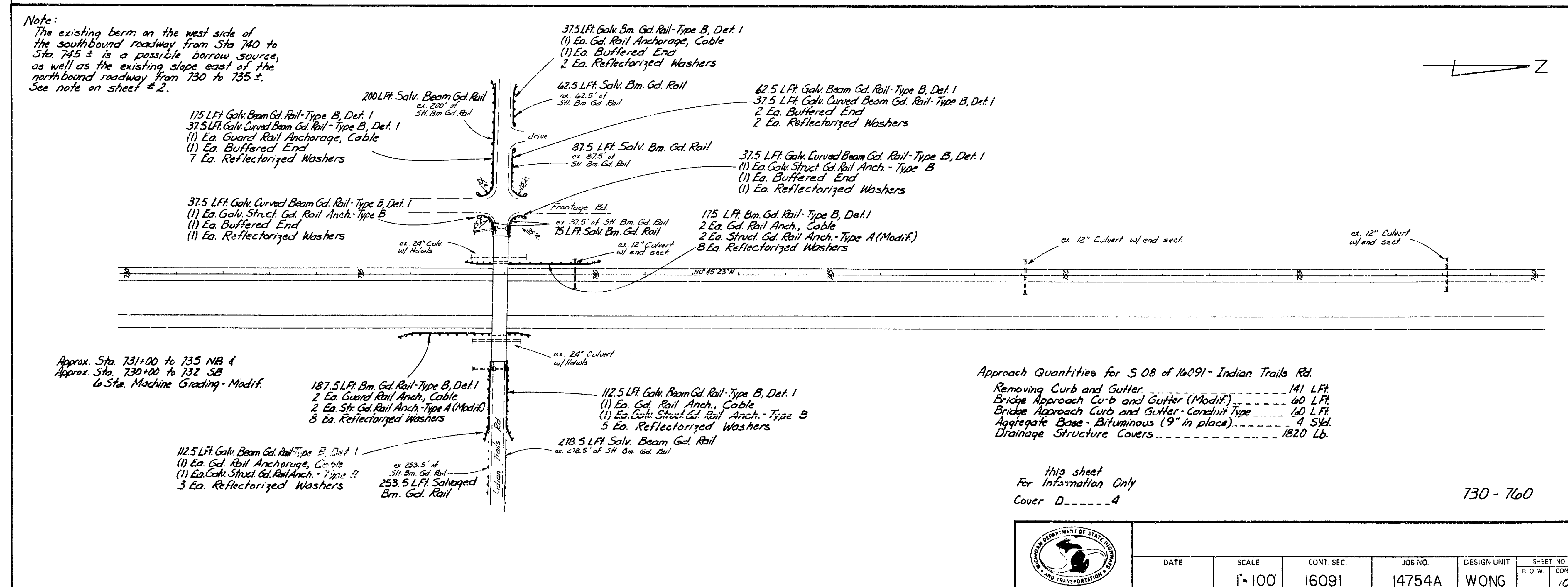


	DATE	SCALE	CONT. SEC.	JOB NO.	DESIGN UNIT	SHEET NO.
		1" = 100'	16091	14754A	WONG	9

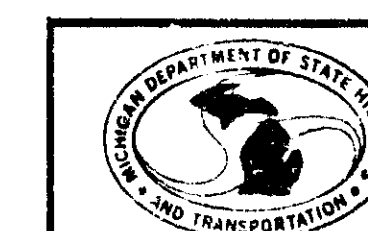
FINAL R.O.W.			
AUTH.	DATE	NO.	REVISION



Note:
The existing berm on the west side of the southbound roadway from Sta 740 to Sta 745 ± is a possible borrow source, as well as the existing slope east of the northbound roadway from 730 to 735 ±. See note on sheet # 2.

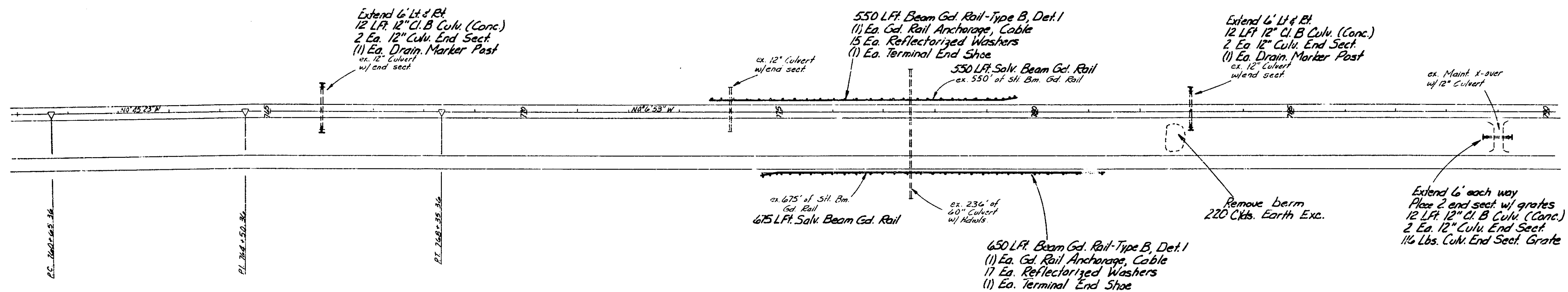


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For Information Only
Cover D-----4



DATE	SCALE	CONT. SEC.	JOB NO.	DESIGN UNIT	SHEET NO.
	1"=100'	16091	14754A	WONG	10

FINAL ROW			
AUTH.	DATE	NO.	REVISION



760 - 790

Bridge Approach Guard Rail Quantities

	NE Quad.	NW Quad.	SW Quad.	SE Quad.	Total
Galv. Beam Guard Rail - Type B, Det. 1	112.5 Lf.	162.5 Lf.	250 Lf.	112.5 Lf.	637.5 Lf.
Galv. Curved Beam Gd. Rail - Type B, Det. 1	-	-	112.5 Lf.	-	112.5 Lf.
Guard Rail Anchorage, Cable	1 Ea.	1 Ea.	-	1 Ea.	3 Each
Galv. Struct. Gd. Rail Anchorage, Type B	1 Ea.	1 Ea.	1 Ea.	1 Ea.	4 Each
Reinforced Washers	4 Ea.	5 Ea.	7 Ea.	4 Ea.	20 Each
Terminal End Shoes	-	-	1 Ea.	-	1 Each

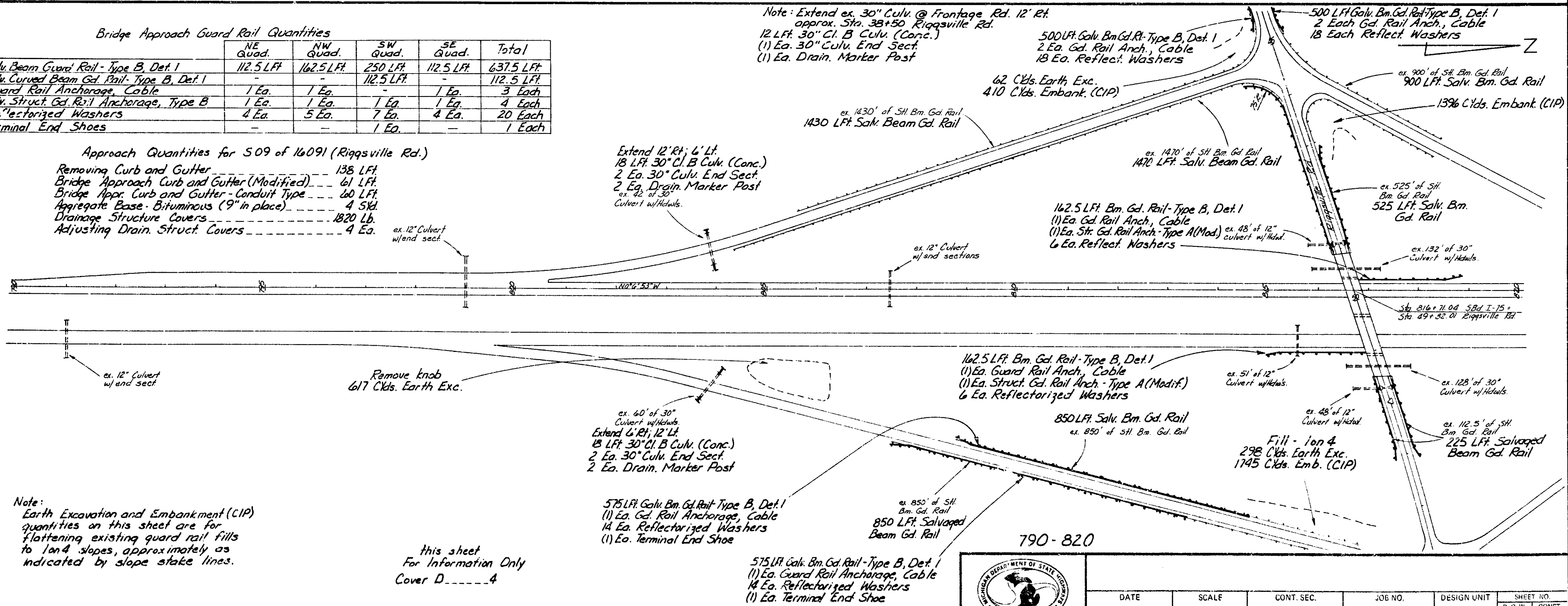
Approach Quantities for 509 of 16091 (Riggsville Rd.)

Removing Curb and Gutter - 138 Lf.

Bridge Approach Curb and Gutter (Modified) - 61 Lf.

Bridge Appr. Curb and Gutter - Conduit Type - 60 Lf.

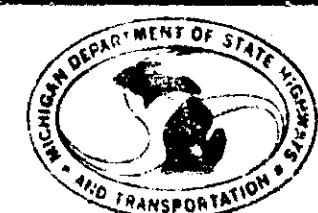
Aggregate Base - Bituminous (9\"/>



790 - 820

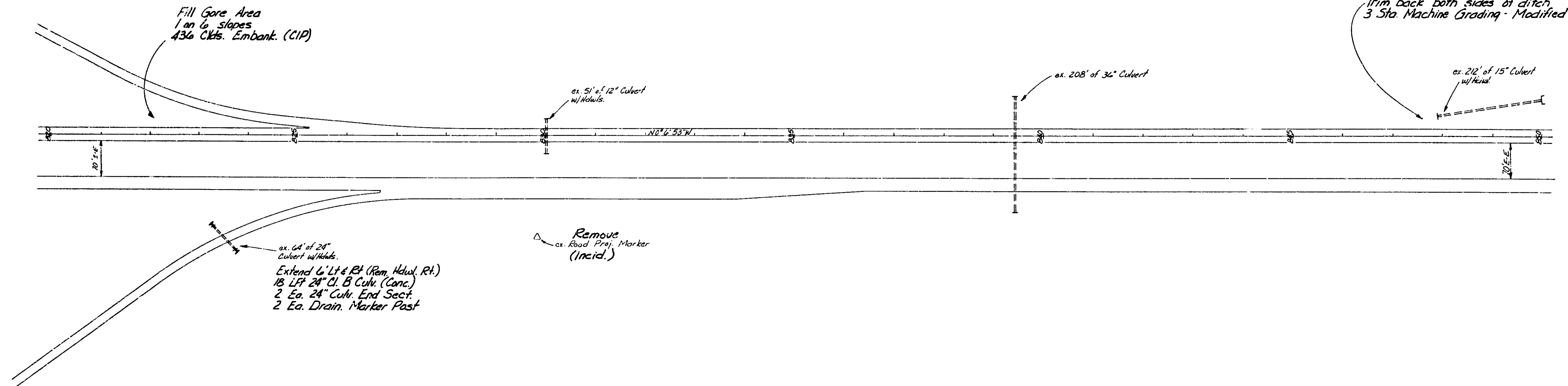
Note:
Earth Excavation and Embankment (CIP)
quantities on this sheet are for
flattening existing guard rail fills
to 1 on 4 slopes, approximately as
indicated by slope stake lines.

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For Information Only
Cover D - 4



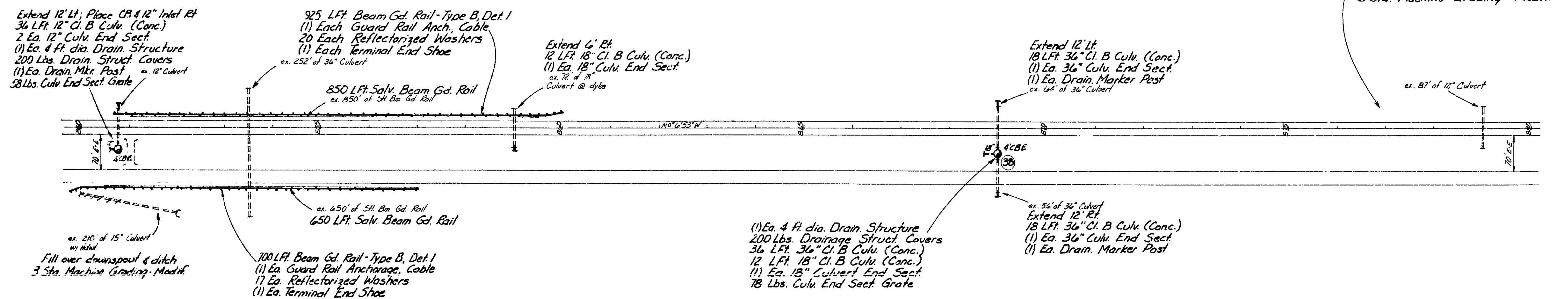
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	1" = 100'	16091	14754A	WONG	11

FINAL R.O.W.			
AUTH.	DATE	NO.	REVISION



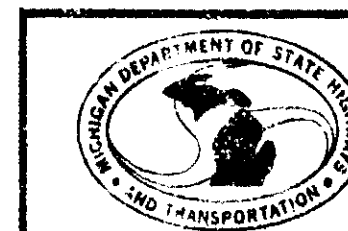
820 - 850

Note:
There is a possible source of
borrow left of S&D Railway from
Sta. 841+ to Sta. 846 ±.
See note on sheet # 2.



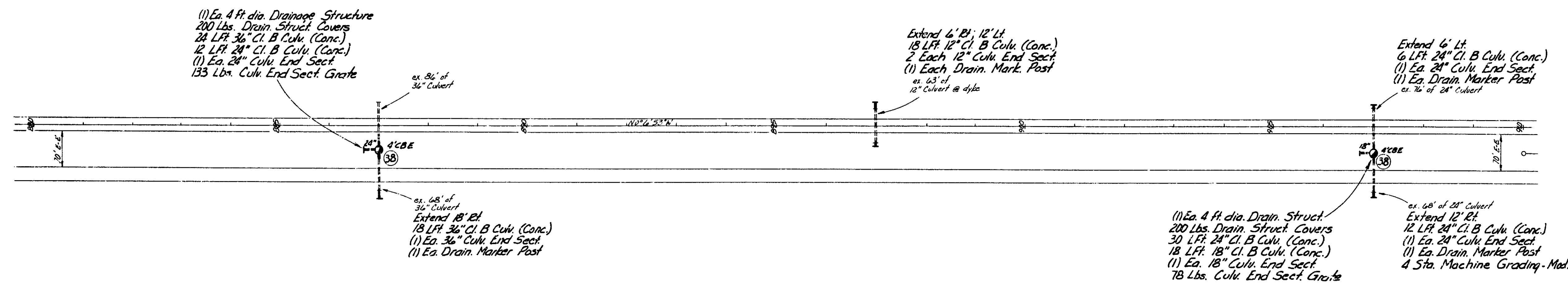
850 - 880

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For Information Only
4' Catch Basin ----- 2
Cover E ----- 2



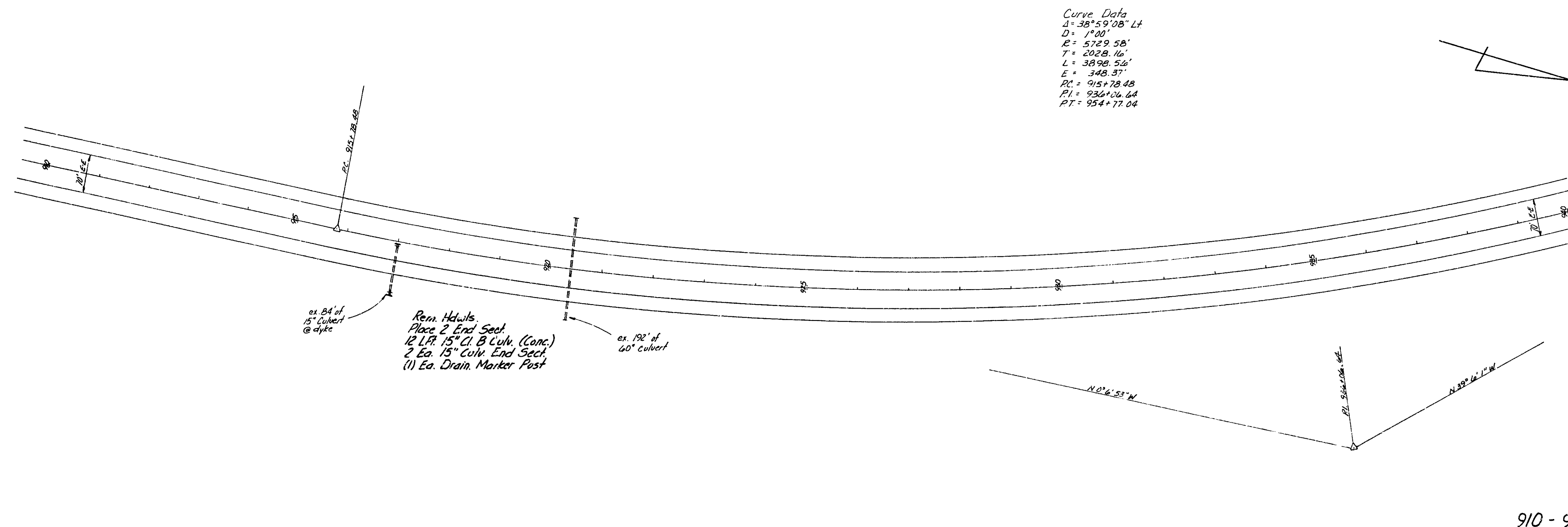
DATE	SCALE	CONT. SEC.	JOB NO.	DESIGN UNIT	SHEET NO.
	1" = 100'	16091 16092	14754A	WONG	12

FINAL R.O.W.			
AUTH.	DATE	NO.	REVISION



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For Information Only
4' Catch Basin----- 2
Cover E----- 2

880 - 910

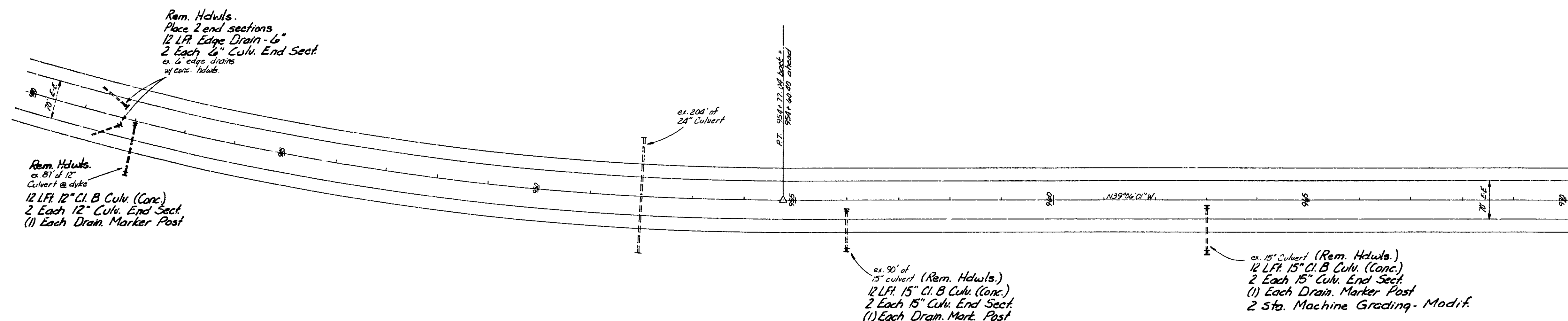


910 - 940

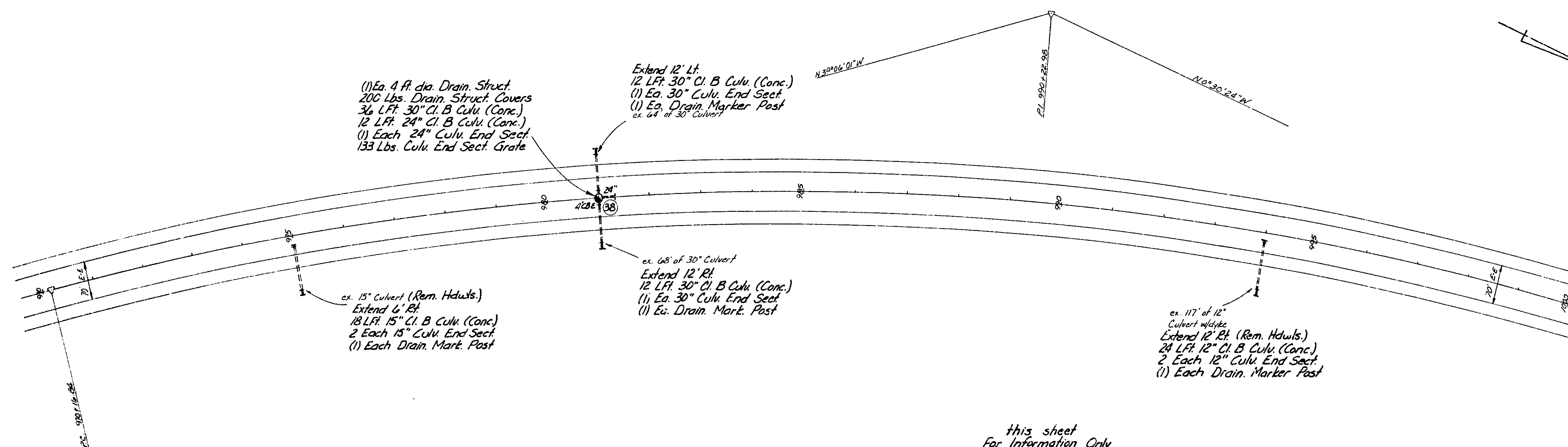


DATE	SCALE	CONT. SEC.	JOB NO.	DESIGN UNIT	SHEET NO.
	1" = 100'	16092	14754A	WONG	13

FINAL R.O.W.			
AUTH	DATE	NO.	REVISION



940 - 970



Curve Data
Δ = 38° 35' 37" Rt
D = 1" 00'
E = 5729.58'
T = 2006.14'
L = 3859.36'
E = 341.06'
PC = 970+16.84
PI = 990+22.98
PT = 1008+76.20

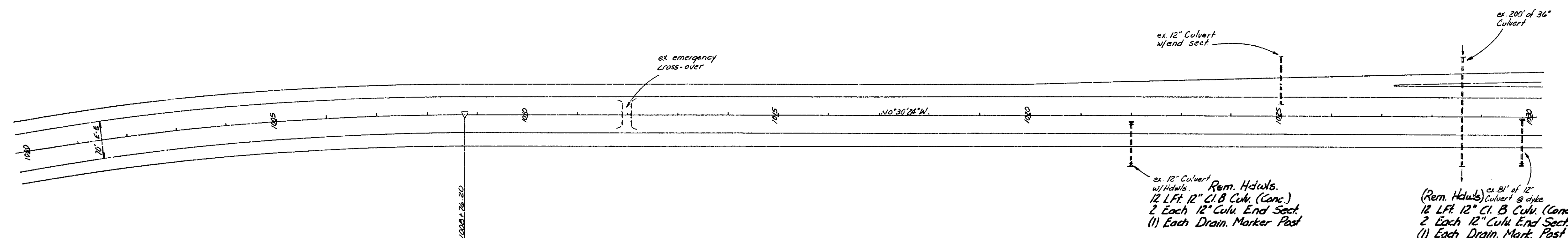
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For Information Only
4' Catch Basin -----
Cover E -----

970 - 1000

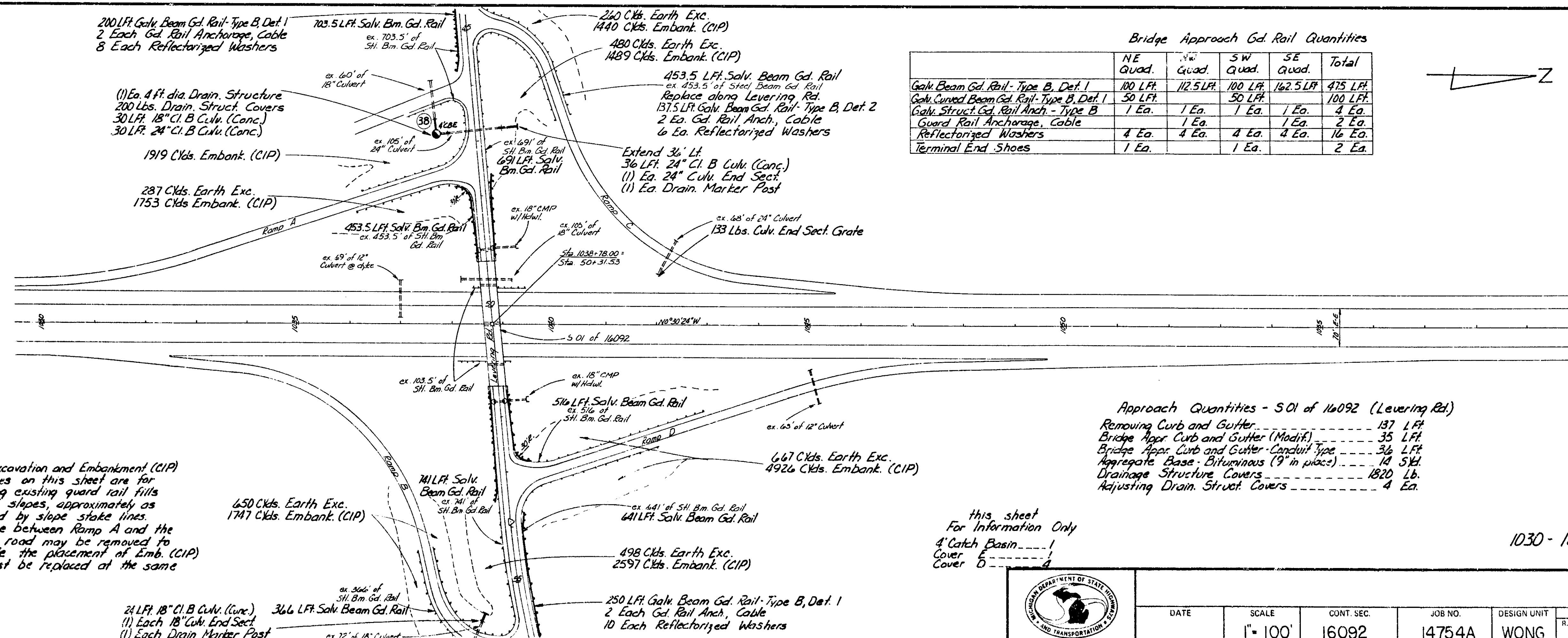


DATE	SCALE	CONT. SEC.	JOB NO.	DESIGN UNIT	SHEET NO.
	1" = 100'	16092	14754A	WONG	14

FINAL R.O.W.			
AUTH.	DATE	NO.	REVISION



1000 - 1030



Note:
Earth Excavation and Embankment (CIP) quantities on this sheet are for flattening existing guard rail fills to 1 on 4 slopes, approximately as indicated by slope stake lines. The fence between Ramp A and the frontage road may be removed to facilitate the placement of Emb. (CIP) but must be replaced at the same location.

Bridge Approach Gd. Rail Quantities

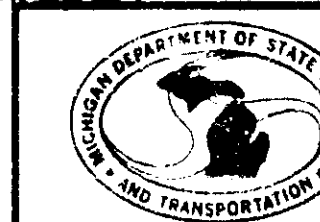
	NE Quad.	SE Quad.	SW Quad.	SE Quad.	Total
Gd. Beam Gd. Rail - Type B, Det. 1	100 L.Ft.	112.5 L.Ft.	100 L.Ft.	162.5 L.Ft.	475 L.Ft.
Gd. Curved Beam Gd. Rail - Type B, Det. 1	50 L.Ft.				50 L.Ft.
Gd. Struct. Gd. Rail Anch. - Type B	1 Ea.	1 Ea.	1 Ea.	1 Ea.	4 Ea.
Guard Rail Anchorage, Cable	1 Ea.	1 Ea.	1 Ea.	1 Ea.	4 Ea.
ReflectORIZED Washers	4 Ea.	4 Ea.	4 Ea.	4 Ea.	16 Ea.
Terminal End Shoes	1 Ea.		1 Ea.		2 Ea.

Approach Quantities - S.O.I. of 16092 (Levering Rd.)

Removing Curb and Gutter	137 L.Ft.
Bridge Appr. Curb and Gutter (Modif.)	35 L.Ft.
Bridge Appr. Curb and Gutter - Conduit Type	36 L.Ft.
Aggregate Base - Bituminous (9\" in place)	14 S.Yd.
Drainage Structure Covers	1820 Lb.
Adjusting Drain Struct. Covers	4 Ea.

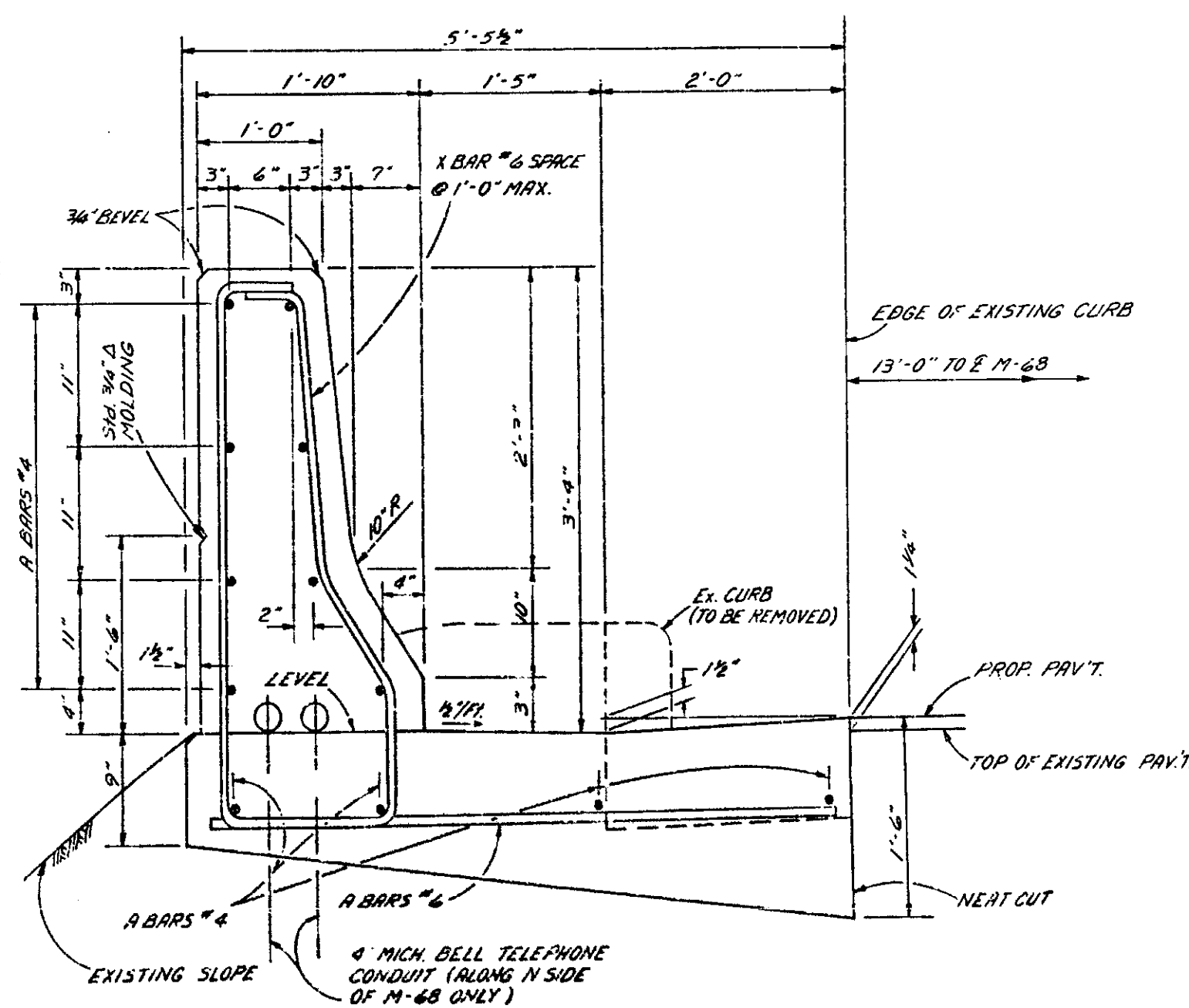
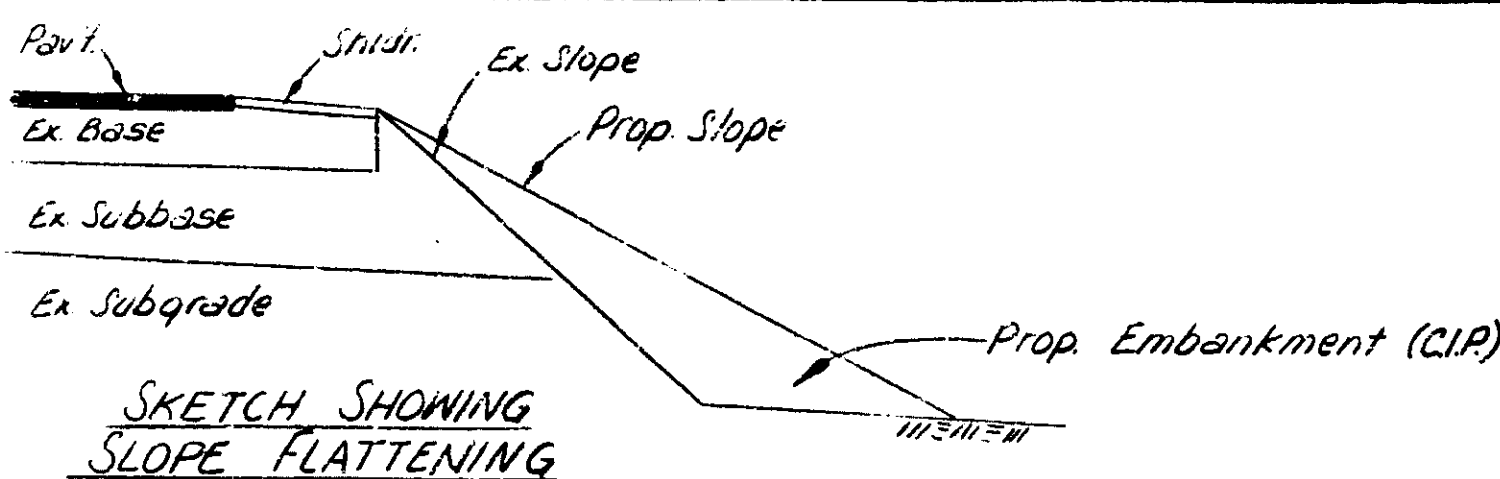
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For Information Only
4' Catch Basin - 1
Cover E - 1
Cover D - 1

1030 - 1060

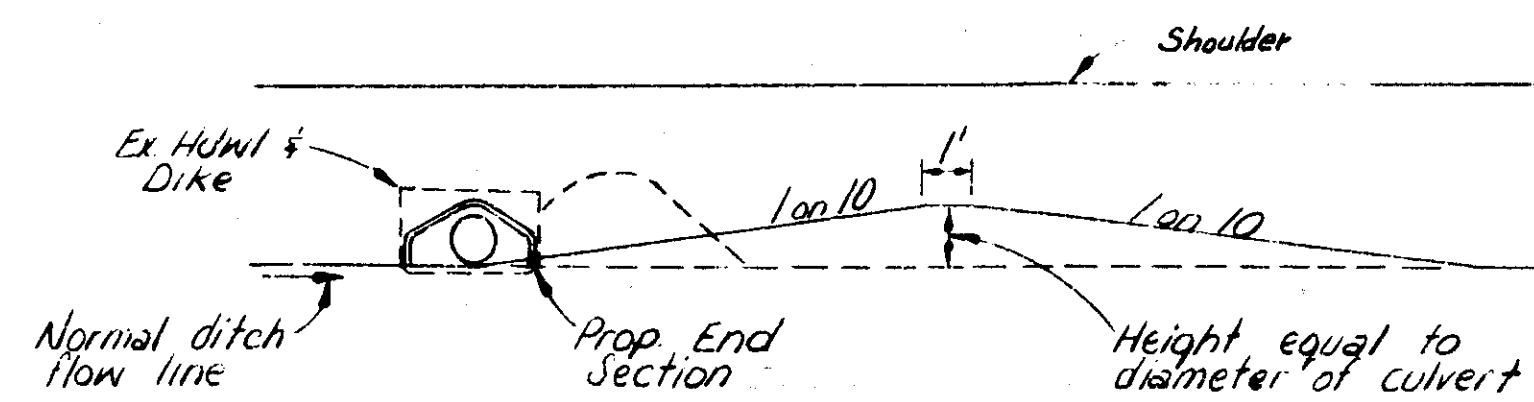


DATE	SCALE	CONT. SEC.	JOB NO.	DESIGN UNIT	SHEET NO.
	1" = 100'	16092	14754A	WONG	15

A quantity of "Class 2 bedding" and "Embankment (C.I.P.," for culvert extensions and for flattening slopes at median gullies and cross-overs is included in the miscellaneous estimate and plan sheet quantities. These items shall be placed immediately after grading operations. Log shall be placed in the area immediately around the end craters and seeding shall be placed at remainder of the area.

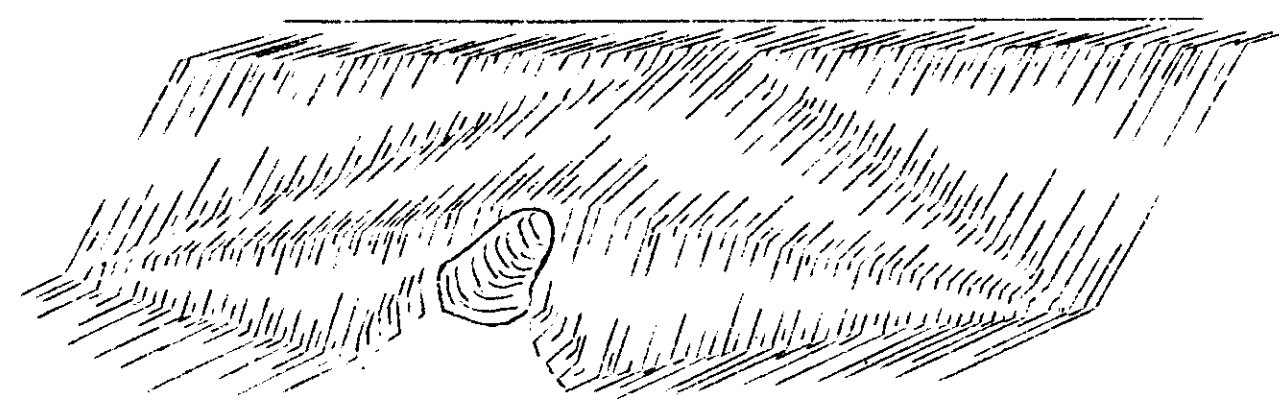


CONCRETE BARRIER - SPECIAL
To be used between SOI & SO2 of 16091



DETAIL FOR DIKES
IN DITCHES

The slopes on median crossovers shall also be flattened to 1 on 10. Embankment quantities are included in the quantities for entire project on sheet #3.



CULVERT EXTENSIONS

When the extension is beyond the slope, additional embankment shall be placed as shown, with a maximum slope of 1 on 10.

Notes:

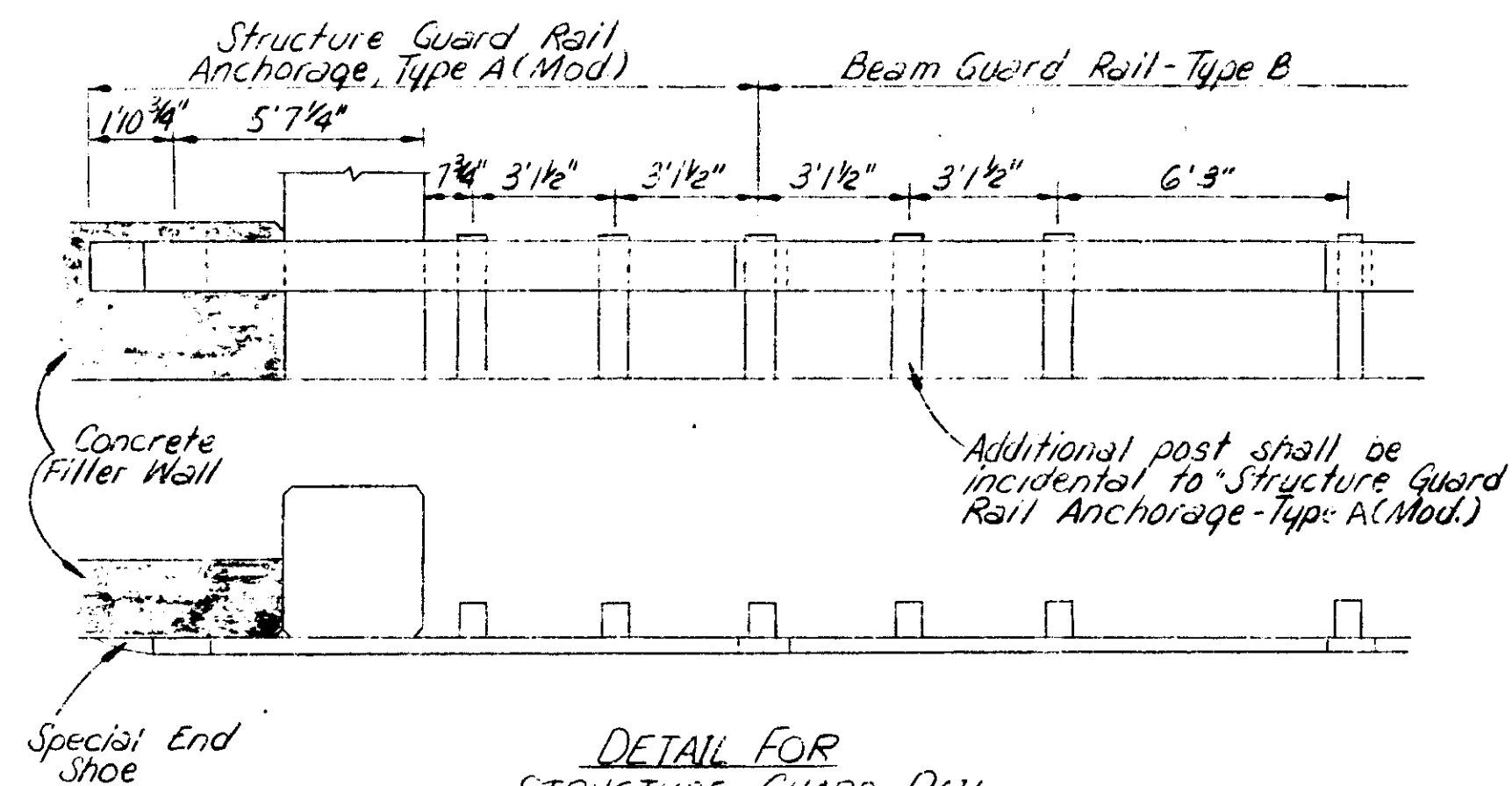
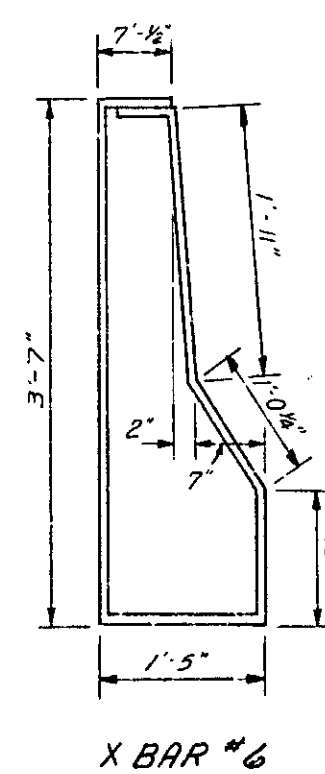
All bends in Reinforcing Steel to be made about a pin of the minimum diameter allowed by the Standard Specifications.

Tolerances in cutting and bending bars are as established in Manual of Standard Practice of the Concrete Reinforcing Steel Institute and Detailing Manual of the American Concrete Institute.

For Bevel & Molding details see Bridge Plans Steel Reinforcement for Concrete Barrier-Special shall Conform to Section 8.05.03 Bar Reinforcement for Structures of Standard Specifications for Highway Construction.

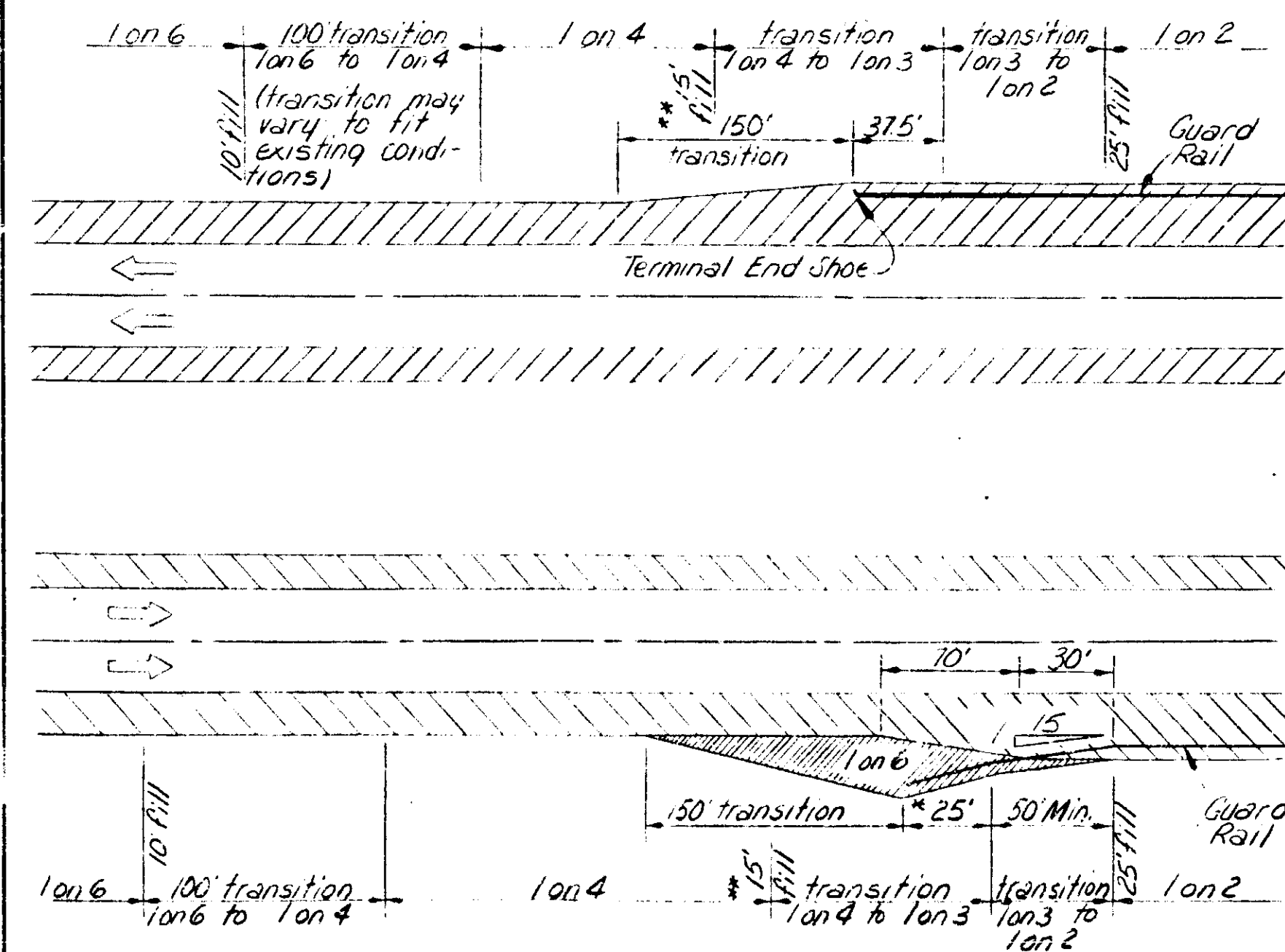
4" Ø Telephone Ducts and Expansion Couplings will be furnished by Michigan Bell Telephone Co. and installed by the contractor.

The Michigan Bell Cable in the shoulder will be temporarily relocated by others prior to this contract.



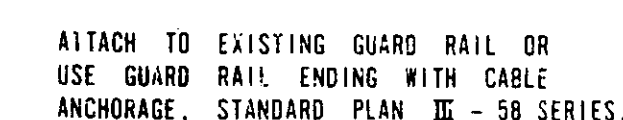
DETAIL FOR
STRUCTURE GUARD RAIL
ANCHORAGE, TYPE A (MOD.)

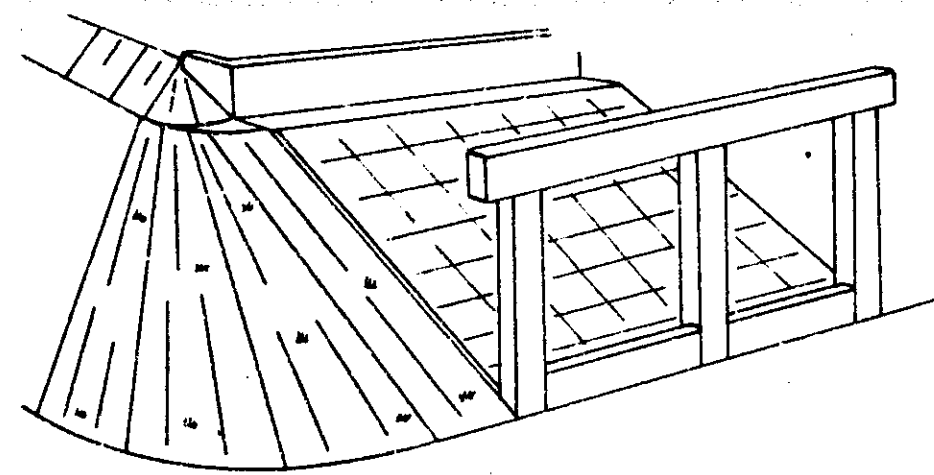
For details of anchorage attachment and special end shoe, see sheet #19



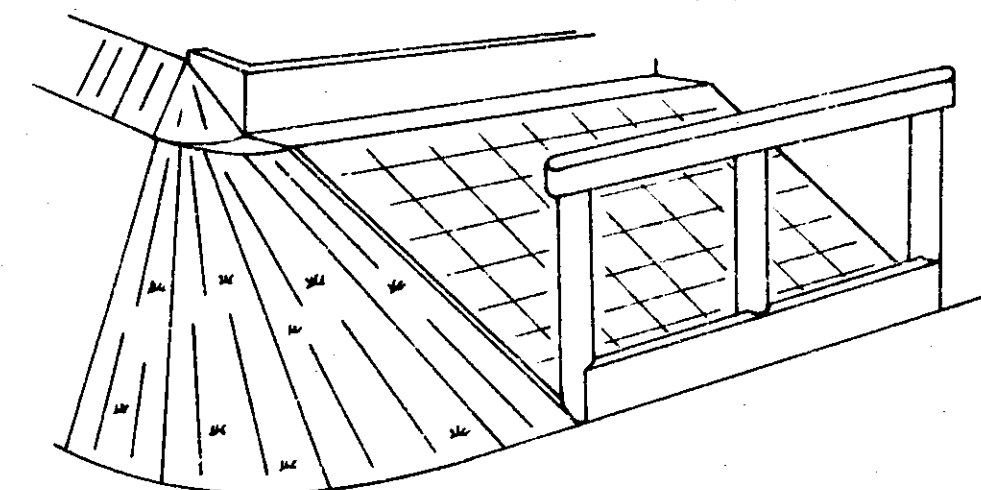
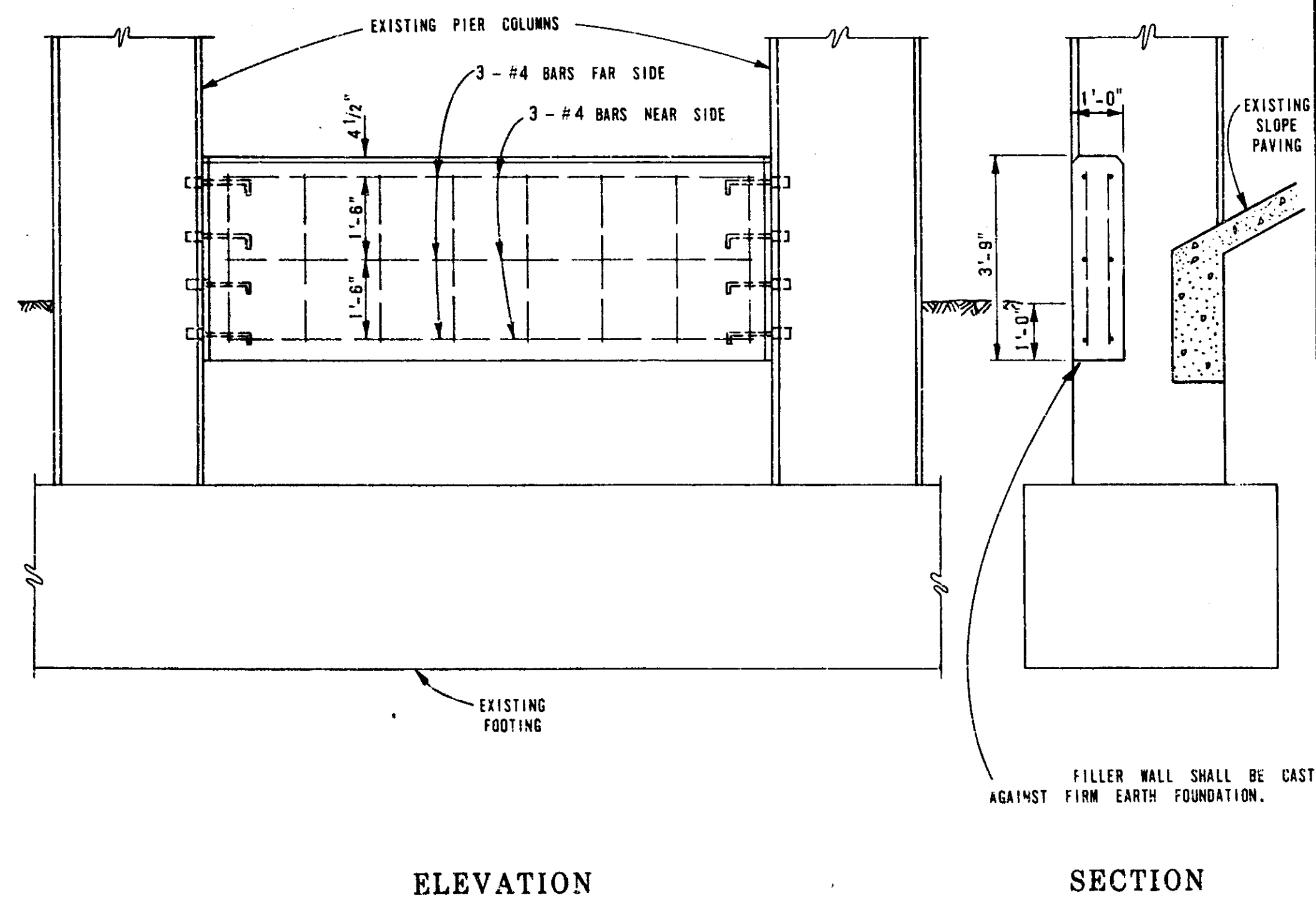
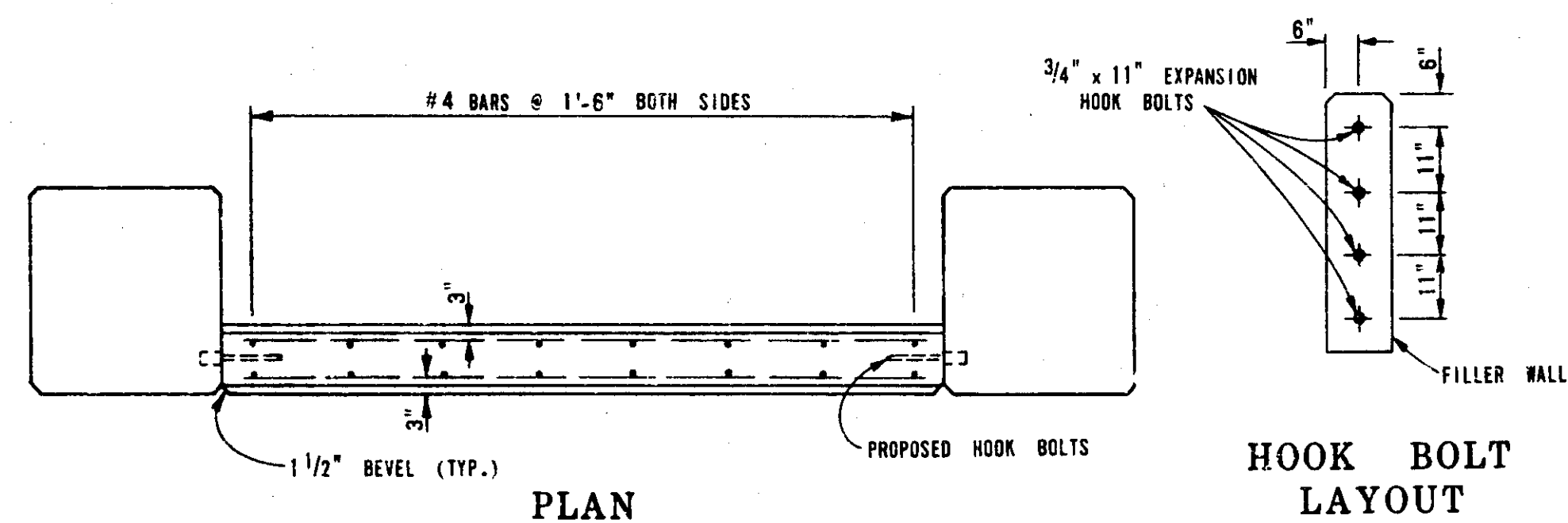
* Guard Rail Anchorage-Cable
 ** Depth may be less to fit existing conditions, such as restricted R.O.W, etc.

SKETCH FOR GUARD RAIL EMBANKMENT TRANSITIONS

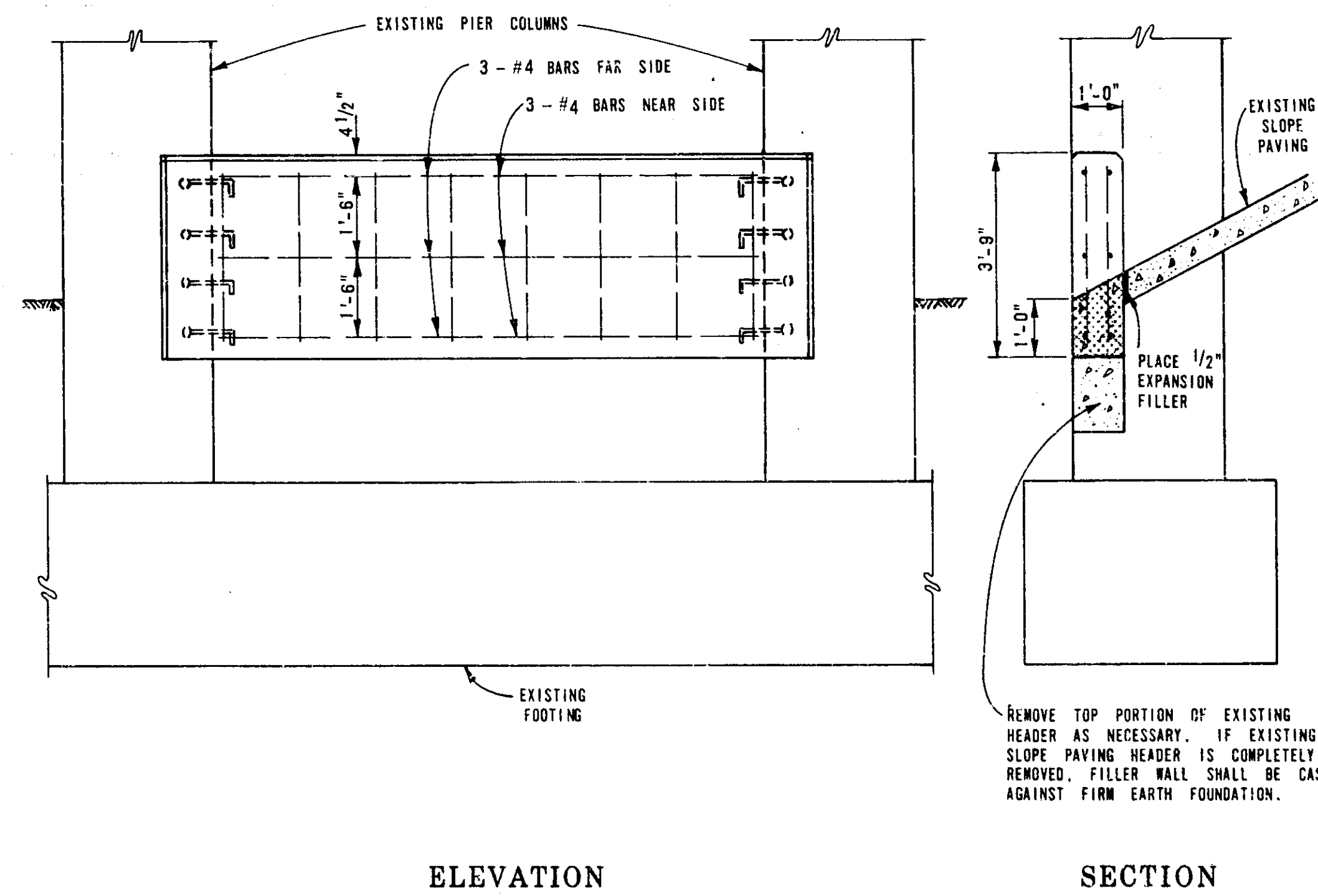
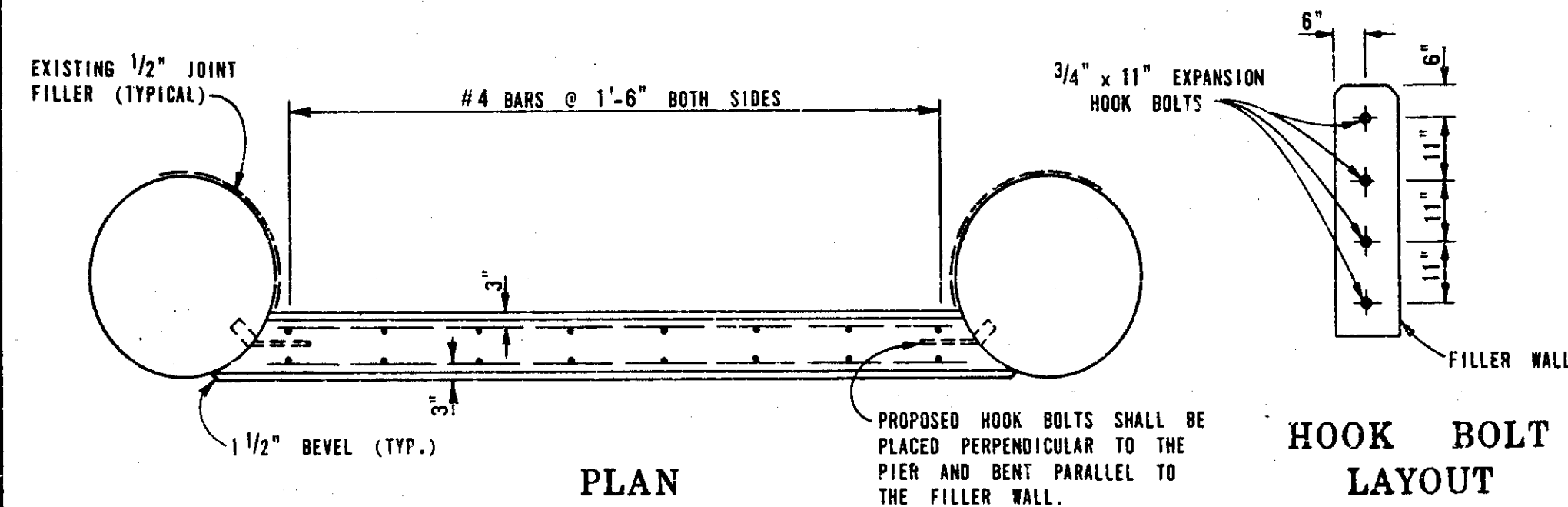




SKETCH OF FILLER WALLS AT SQUARE PIER COLUMNS



SKETCH OF FILLER WALLS AT ROUND PIER COLUMNS



NOTES:

GUARD RAIL ATTACHMENT TO FILLERWALLS SHALL BE AS SHOWN ON STANDARD PLAN III-67 SERIES AND SHEET NO. 1.

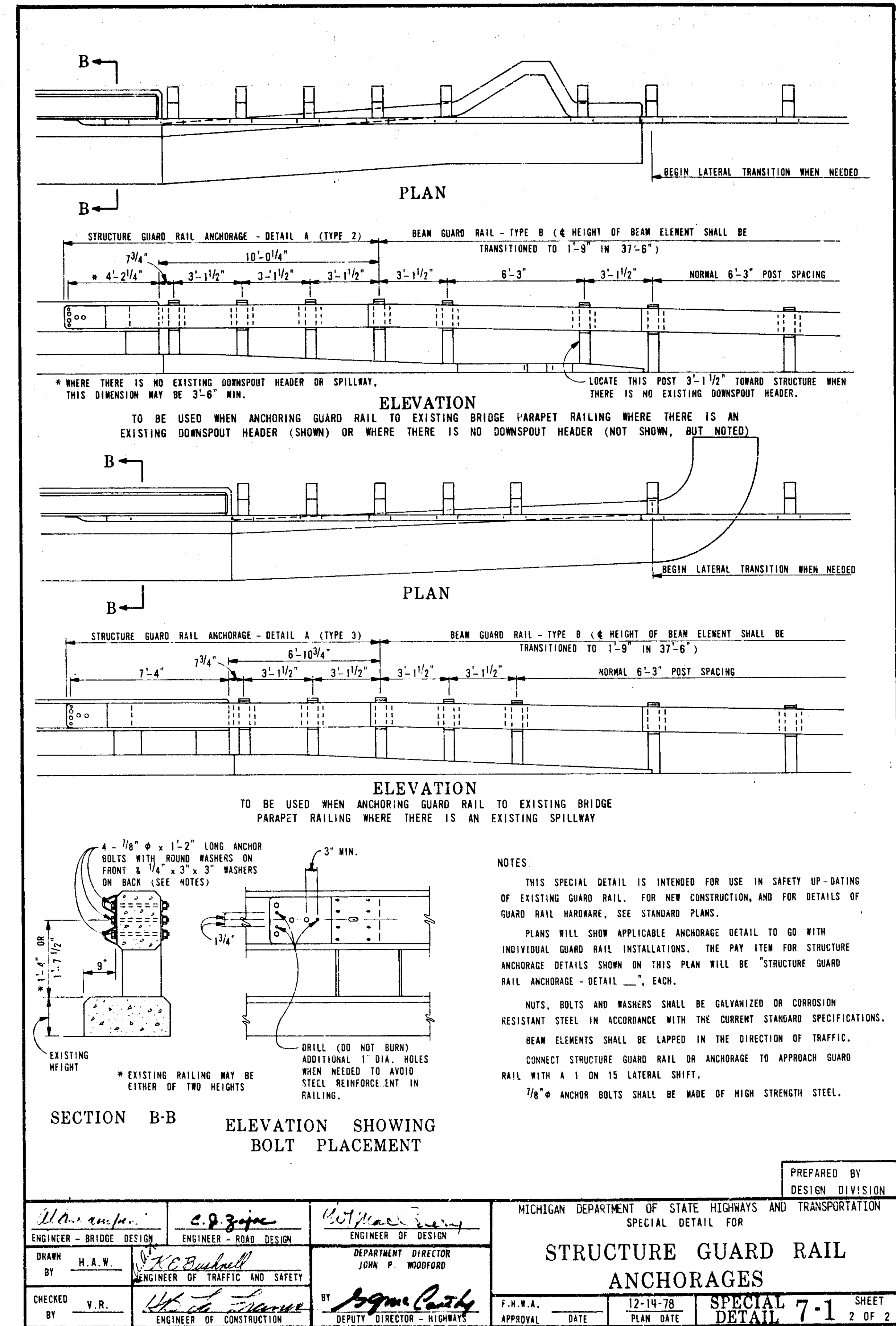
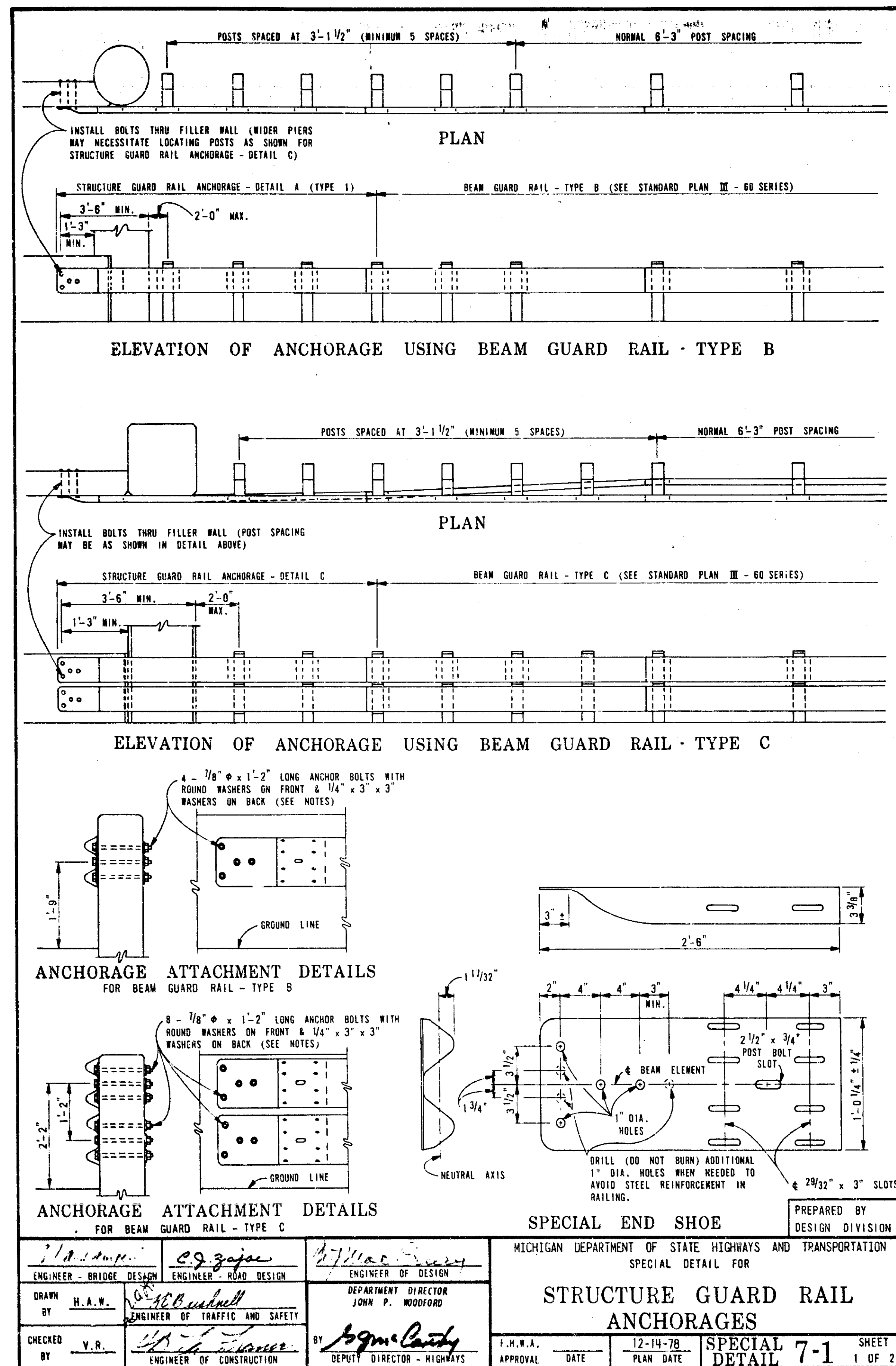
WHEN "NEW JERSEY" SHAPE BARRIER IS PLACED IN FRONT OF BRIDGE PIERS, SEE STANDARD PLAN II-49 SERIES.

STATE OF MICHIGAN
DEPARTMENT OF STATE HIGHWAYS AND TRANSPORTATION
SPECIAL DETAIL
**FILLER WALLS BETWEEN
EXISTING BRIDGE PIERS**

APPROVALS			
CHECKED	<i>C. J. Zivic</i>	12-1-76	DATE
	ENGINEER - ROAD DESIGN		
CHECKED	<i>W. L. K. K. K.</i>	12/2/76	DATE
	ENGINEER - BRIDGE DESIGN		
RECOMMENDED FOR APPROVAL	<i>W. L. K. K. K.</i>	12-2-76	DATE
	ENGINEER OF DESIGN		
RECOMMENDED FOR APPROVAL			DATE
	ENGINEER OF TRAFFIC AND SAFETY		
RECOMMENDED FOR APPROVAL			DATE
	ENGINEER OF CONSTRUCTION		

DEPARTMENT OF STATE HIGHWAYS AND TRANSPORTATION
JOHN P. WOODFORD - DIRECTOR

BY	DEPUTY DIRECTOR - HIGHWAYS	DATE
DRAWN BY	H. A. W.	CHECKED BY
		V. R.
PREPARED BY	DESIGN DIVISION	APPROVED BY
		F. H. W. A.



SUMMARY OF QUANTITIES

ITEM DESCRIPTION				ITEM CODE	UNIT	PROJECT TOTAL	SCHEDULE OF QUANTITIES																AS CONST PROJECT TOTAL	Auth #	ITEM DESCRIPTION*	ITEM CODE	UNIT	AS CONST PROJECT TOTAL	Auth #																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
				JOB SUBTOTAL	SHEET 002	SHEET 003	SHEET 004	SHEET 005	SHEET 006	SHEET 007	SHEET 008	SHEET 009	SHEET 010	SHEET 011	SHEET 012	SHEET 013	SHEET 014	SHEET 015																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					</